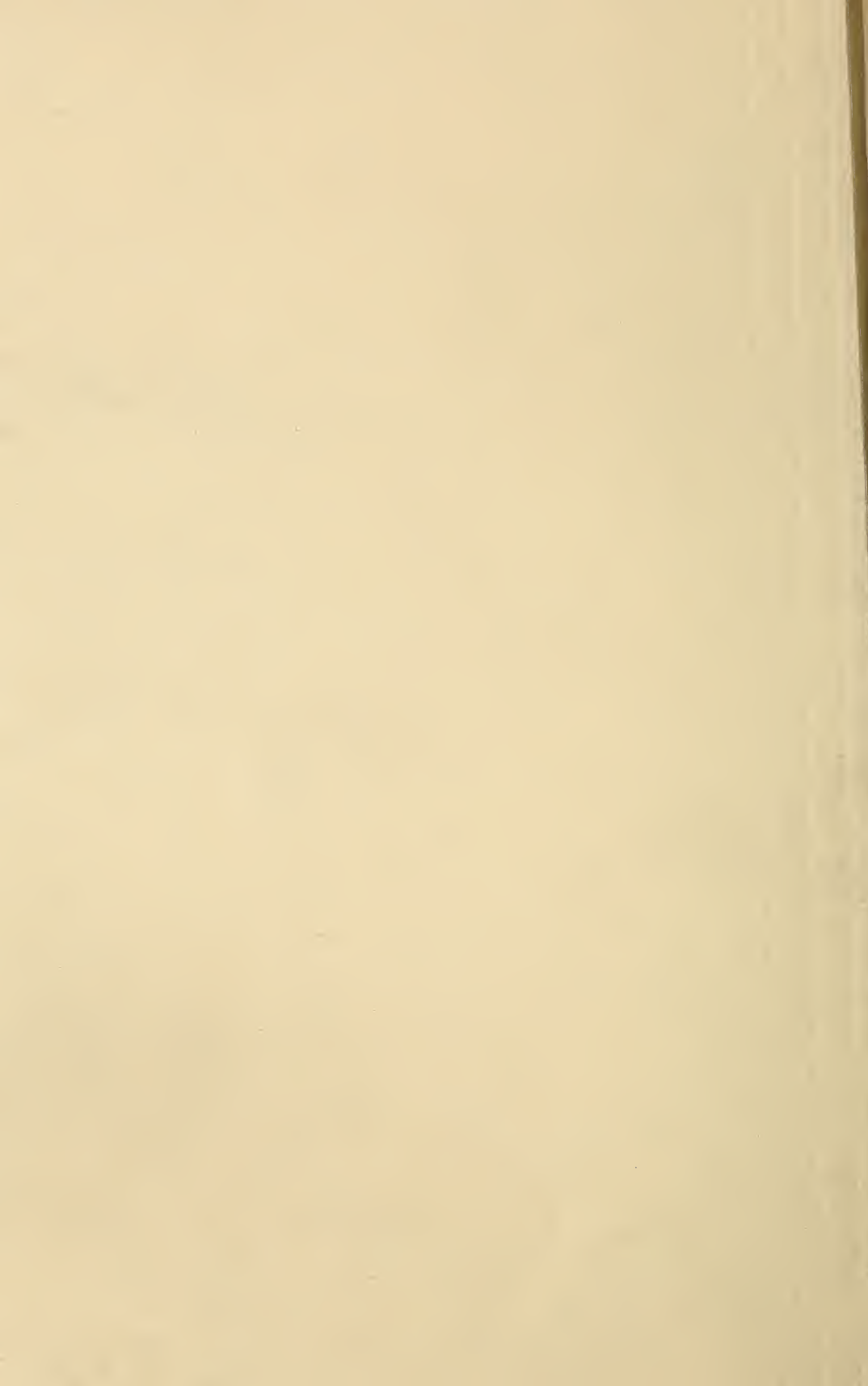
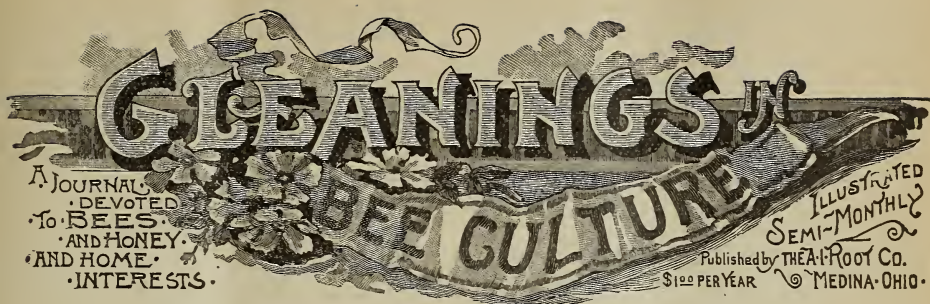


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Vol. XXV.

JULY 1. 18 7

No. 13



WHEN NIGHTS ARE SO HOT one can't sleep, bees seem to get in their best work.

WHAT SIZE should starters be in sections? is asked in *American Bee Journal*. Three of the 21 repliers want small starters, the rest full sheets.

I'M RATHER GLAD friend Thompson's figures as to economy of making one's own foundation are countered on page 446. I'd rather not believe it's cheaper to make my own foundation. Don't want the bother and worry of it.

NEVER BEFORE, I THINK, were railroad rates so low to a big bee convention as to the Buffalo convention, Aug. 24—26. As attendance is generally in proportion to cheapness of travel, this ought to be the biggest convention we have ever had.

F. L. THOMPSON is right, page 445, in thinking you can't drain the liquid part from all kinds of granulated honey. It's only that with coarse grains, and T. F. Bingham thinks it can be done in no case with properly ripened honey. Possibly that's true.

JUNE 9, No. 156 was unqueened. June 15 it had an egg in a queen-cell. Where did that egg come from? Had it remained there 6 days without hatching? or was it the product of an aspiring worker? I incline to the latter view—have had several such cases.

WHEN YOU HAD such a tough time with that swarm, Ernest, p. 458, didn't it meander along your backbone that it might have been better to have had the queen clipped? [Yes, if we were not selling queens right along we would clip all our queens after they were laying. See editorials; also Doolittle's article.—Ed.]

N. E. FRANCE, the Wisconsin Foul-brood Inspector, writes *American Bee Journal*, "I find many Wisconsin bee-keepers who did not know

their bees were diseased, and nearly every case is where they do not take a bee-paper." May be one section of a foul-brood law ought to compel every bee keeper to take a bee-journal.

IT IS POSSIBLE that the Monnier treatment for paralysis, page 447, had nothing to do with the cure. It is also possible that it had every thing to do with it, and it is so easily tried that many ought to report as to its efficacy within the next two months. Won't some of you paralytics, for the general good, try it, and promptly report success or failure?

IN REPLY to your question, p. 441, Mr. Editor, R. Wilkin wants a term that in one word comprehends the hive with its contents—bees, combs, and all. What word have we now for that? [There is no term covering such an idea. Perhaps "stock" would come the nearest to it. This term is sometimes used in the sense above described, and sometimes applying in a sense to the bees only.—Ed.]

THE FEW LINDENS to be found here are doing better than your Medina trees. Most of them are loaded with blossom-buds. [I hope your basswoods may more fairly represent those over the country generally. It would be worth much, if we could know the probable prospects from basswood over the country. If no bloom is to be expected, then this will have a tendency to stiffen prices a little on white clover.—Ed.]

IT LOOKS STRANGE to see supers nearly filled with honey, and no sealed honey in the brood-frames; but that's common this year. Strong colonies and a sudden flow of great abundance. [We do not find that condition here at Medina. I suspect the reason is, that our home apiary is overstocked. We are this week starting an out-apiary to give some relief to the home yard. Later.—Yard is located. Bees at the out-yard are doing better than at the home yard.—Ed.]

AN UNUSUAL FEATURE of swarming this year is the very little preparation made in advance. The old rule, that the swarm issues when the first cell is sealed, is utterly ignored, and in most cases queen-cells have only eggs. It may

May. There were many hatching bees, and brood in three to five combs. The bees just vanished, and were nowhere to be seen. If they had died in or about the hive, possibly we might have found out what was the matter; but they seemed to evaporate, hence I have called it "evaporation." The trouble this time was more sweeping and disastrous than in my experience in the spring of 1891. The loss of bees was so complete that many colonies had not half a teacupful of bees left, where, less than a week before, they covered brood in three combs and upward. The queens, it seems, were always left; but the workers so completely evaporated that the brood perished. The Rauchfuss Brothers reported they had over 200 colonies, and there were not enough bees left to make 25 good ones. All apiaries were not alike affected—that is, to the same extent. I saw but one of the apiaries affected (the malady did not extend to my territory), and that was a few colonies that Mr. W. L. Porter had in North Denver. Those few colonies had three to five times more brood than they could care for. In fact, they were so very weak that it was only the most favorable weather that would enable them to pull through, and this was about the second week of June.

As I said of the experience I had in 1891, many said it was high winds. Others said it was the smelter smoke that killed them. It was just as windy at Loveland, and in badly affected districts protected apiaries were as bad off as unprotected ones. Then, too, it hit hard where the smelter smoke did not go, and places it did go were "O. K." It seems that it could not be accounted for by fruit-bloom spraying, either, though it occurred about that time. It remains yet a complete mystery. Should it strike a whole State as it struck Denver last year, the consequences would be almost annihilation of the bee-business. I hope our Colorado apiarists will be on the lookout this year to watch the trouble if it should appear.

Later.—Since writing the above the Colorado State Association has had another meeting. I understand the new disease, or whatever it is, was largely discussed, but I believe without any definite results. Paralysis has been more or less in Colorado, but I can not think this trouble is the same. I have several times had some loss of bees in May, especially if there came a cold rainstorm. Bees would bloat, and crawl out and die about the yard, many getting from twenty to thirty feet from the hive, jumping and hopping in their effort to fly. Some call this "May sickness." It comes about the time of apple-bloom. I had one colony that was afflicted in this way last year, and it did not get over it for a number of weeks.

Before this is published I may possibly learn more of these matters. I hope to see many of the apiarists in Colorado in April and May—at

least by May; and as I shall be going by wagon I shall have some opportunity to gather information.

Loveland, Colo.

[What you have described does indeed seem to be a new sort of disease—at least I never heard of it before, or at all events where the malady seemed to be so destructive and far-reaching. At two different seasons in our own apiary we noted quite a loss of the workers. Examination of the grounds showed that hundreds and almost thousands of workers with defective wings were flying about, and crawling up blades of grass. The bees were not bloated nor distended, and were apparently perfect in every respect save the wings. I believe I am quite familiar with bee-paralysis, and I feel very certain that it is nothing of this order. It is possible that what I have described was a milder form of what appeared about Denver. In our own case we could scarcely account for the trouble—at least, why the wings of the bees should be defective. It is possible that a peculiar kind of flora tore the wings as the bees went in and out of the blossom in quest of honey or pollen. I should be glad to have our readers report any similar cases that may have come under their notice. By comparing notes we may be able to determine what the trouble is.—ED.]

RULES FOR GRADING HONEY.

THE IMPERFECTIONS OF THE ACCEPTED GRADING; CRITICISMS AND SUGGESTIONS.

By J. E. Crane.

On page 157 of GLEANINGS, W. A. H. Gilstrap says, "I never heard of a half-crop of honey in this valley that was *actually* water-white, or that had sections actually unsoiled by bees. *I hope grading-rules will not be among the impossibilities next season.*" I have underscored the last sentence in this quotation, and will use it as a text for a short discussion of that already much-discussed subject, *Grading*.

□ The bee-keepers of this country were two or more years in discussing and making rules for grading; and now we have had two or more years in which to practice these rules; and our bee-journals have certainly done their duty in trying to enforce them or bring them into general use. May it not be well, before another crop is gathered, to inquire what have been the results, what the advantages to bee-keepers, what the defects, if any, in those rules? And yet very few, I fear, will care to stand up and express their dissatisfaction, however they may feel, with these rules adopted by the assembled wisdom of the American International Beekeepers' Association; yet Mr. Gilstrap gives us to understand that those grading-rules are among the impossibilities. He does not say they are impossibilities, but hopes rules will be adopted that are *not* impossibilities.

For one I should like to know how many beekeepers have tried to grade exactly by those rules, and their success. How many dealers

bought and sold honey graded accurately by those rules, and their experience?

Experience-meetings are often of value. The last year we had an unusually fine crop of honey in this section, and I said to myself, "I will try to grade my honey just right if I can. I even cut out the rules, as adopted by our International Association, from one of our journals, and tacked it up on a door close by where I was at work, that they might be handy to refer to often, as I was in doubt. Let us see how it worked.

I pick up a section. It is unsoiled, either wood or comb; is of even thickness, and comb to wood attached all right; but, alas! it is not "Fancy," for a dozen cells on one side, inside of the outside row, at the bottom, are unsealed! It does not matter that the outside rows on both sides of the comb are nearly all sealed; those unsealed on the next row from the bottom condemn it.

I next handle a section that seems all right; but, hold! the separator was a little warped, and the comb is not exactly of even thickness. Not one person in twenty would notice it; but a bee-keeper will, and it must be thrown out.

Again, I find a section that fills the bill; but, again, I am disappointed; for on one side, near the bottom, a little brownish tint shows travel-stain. This section will not even answer for No. 1, for is not No. 1 to be without travel-stain? And yet I would as soon place this comb on my table as any other, even if President McKinley were my guest.

I pick up another section; and, while the comb is faultless, the section is a little stained with propolis. The propolis has been removed, but it does not look "unsoiled." This must not be labeled No. 1. Let us be accurate.

The next comb proves a great success. It is "Fancy" in every respect. We are more hopeful. We shall yet have a few cases of real orthodox "Fancy;" but the very next comb, although otherwise all right, has two little cells with their eyes open, inside of the row next to the wood. Half the cells next the wood are sealed; but nothing is said about that in the rules, and we are going to grade our honey by rule. So this section is not fancy—only No. 1.

Again we try it, and are rewarded in finding one or two fancy combs with another equally good; but a small knot-hole in the separator caused a little bulge on one side of the comb, while another is "just a little" soiled on one side by the very industrious Italians bringing up cappings from the brood-chamber and mixing with the new wax, and thus soiling it enough to be perceptible, and we can not even grade it No. 1; but as there seems to be no grade below that, what shall we do with it? I believe some of our largest dealers say they have no use for only two grades. And so I might go on giving my experience in trying to

grade by rule; but after trying it a while I gave up in disgust. It seemed as if the bees had never been informed that these grading-rules had been adopted in Washington some years ago by a lot of very wise bee-masters, and so they have kept right on finishing off their surplus without any regard to them in more than twenty different ways, putting pollen into some of the whitest combs, leaving a cell uncapped here and there, or forgetting to attach the combs at their edges firmly enough to satisfy the rules, although strong enough to bear transportation to the ends of the earth. Worse than this, they have desecrated and tramped over their own work until it is unfit for any grade according to the rules.

I said I gave up trying to grade by rules adopted by our N. A. B. A., and so I did—not because it was impossible, perhaps, but wholly impracticable and unwise. Had I succeeded in getting one-fourth or one-half of my money to correspond with "Fancy" of the rules laid down, I have no reason to believe I should have received a penny more for it than for it as graded, while I should have been quite sure to receive less for the remainder.

I asked one of the largest dealers in New England to make any suggestions or criticism upon my honey, or find all the fault with it he could. He wrote me it was entirely satisfactory, except that it was rather heavy weight. The season being good, the boxes were heavier than usual. I took 24 cases out of a pile of several tons, and shipped to Liverpool, and soon had an order from there for 240 cases just like those I sent, which sold in the open market there at the same price as very best grades of English honey, notwithstanding the English prejudice against foreign goods.

In looking it over I do not see how I could have graded my 1896 crop of honey to any better advantage than I did. And, again, I feel that had I tried literally to follow the rules laid down I should have missed it. It is undoubtedly desirable to have some general rules in grading for commercial purposes, or to facilitate the trade of honey in large lots. I do not see how half a dozen lines can describe the process of grading so as to do justice to both producer and purchaser. Much must depend on the good judgment of the one who grades, as well as in following the rules.

Brevity is said to be the soul of wit; but I doubt if brevity in rules for grading honey is any part of wisdom. According to the rules as they now stand, a speck of propolis on the outside of a comb, or even the section, would spoil it for "Fancy" or even No. 1, while a heavy base or septum of wax, or even several cells partly filled with pollen, might pass for "Fancy."

I take up a bee-journal and look at the quotations, and I am not surprised to find consider-

able variation in the price in the same market of a single grade of honey. In the *Bee-keepers' Review* for March, now before me, I notice that R. A. Burnett, of Chicago, one of the largest wholesale dealers in the country, quotes "Fancy" at 11 to 12 cts., while No. 1 white he quotes at 10—as much difference between different lots of "Fancy" as between "Fancy" and No. 1.

Batterson & Co., of Buffalo, in same issue of *Review*, quote "Fancy" 9 to 10 cts., and No. 1 white 8 to 9—quite as much difference in price in the same grade as between different grades. Middlebury, Vt., May 7.

[For some little time before the article above came to hand, we had been having some correspondence with a number of bee-keepers, asking for their private opinion in regard to the grading rules adopted by us and other publishers of bee-journals. Up until a year or so back there had been no grading-rules in force, and it finally occurred to me that the bee-journals might themselves adopt a set of rules without reference to any convention or organization, and I selected, for GLEANINGS therefore, those prepared by Dr. C. C. Miller, which I herewith give you at this time along with the Washington North American grading side, by side.

WASHINGTON.
FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom or with but few cells unsealed; both wood and comb unsoiled by travel-stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark. That is, there will be "fancy white," "No. 1 dark," etc.

MILLER.
FANCY.—All combs straight, white, well filled firmly fastened to wood on all four sides; all cells sealed; no pollen, propolis, nor travel stain.

No. 1.—Wood well scraped, or entirely free from propolis; one side of the section sealed with white cappings, free from pollen, and having all cells sealed except the line of cells next the wood; the other side white, or but slightly discolored, with not more than two cells of pollen, and not more than ten cells unsealed beside the line of cells touching the wood; the comb fastened to the wood on four sides.

No. 2.—Three-fourths of the total surface must be filled and sealed; wood well scraped of propolis.

No. 3.—Must weigh at least half as much as a full-weight section.

For the classes of honey I would suggest the four already in use, sufficiently understood from the names alone; namely, LIGHT, AMBER, DARK, MIXED.

After I started to put these in force for GLEANINGS, Mr. Hutchinson, of the *Review*, wrote, asking why we should adopt a new set of rules when the Washington grading had been adopted by him for two years, without one word of dissatisfaction or complaint. This seemed like a clincher, and accordingly I threw Dr. Miller's grading overboard (and I guess I must have shut my eyes when I did it). I adopted the Washington grading, and immediately suggested the wisdom on the part of the publishers of the other journals to help us put the grading rules into force. Some of the brethren (not the editors) demurred, but (again I shut my eyes, I think) demurrers I would not accept any more, because I thought it was high time that we should try something, and not keep continually "talking," and doing nothing.

Well, two years have elapsed. The Washington grading has been tried and found wanting; referring to which, one intelligent bee-keeper, in a private letter, says:

"The first thing that strikes me is a feeling of wonder that a set of honest and intelligent men could agree to the Washington grading. I can see how intelligent rascals or honest ignoramuses might do so, but not men both intelligent and honest."

Now that I have my eyes wide open I do not know whether to call myself an "honest ignoramus" or one belonging to the other class. Whichever it is, I am in good company. Brother Crane himself was present in Washington when the grading rules were adopted, and so was Mr. Secor, Mr. Frank Benton, and a score of others; and later on was added to the list the editors of the various bee-journals.

Mr. Byron Walker at the very outset showed that the Washington rules were drawing things down too fine—that it was impossible to grade honey strictly according to them. To prove his assertion he actually advertised to pay \$1.00 a pound for "fancy" honey graded strictly according to the Washington grading. I was almost inclined to refuse his advertisement, for I hardly thought the man was in his right mind to offer such a price on honey. But you see he had his eyes open (though mine were shut) and knew what he was doing. It is needless to say that he failed to get a single pound of honey. I suspect that, if we had sat right down, as Mr. Crane did, and actually tried the rules in Washington, that city where wisdom sits supreme, we should have seen they were practically good for nothing.

I asked some of the brethren, with whom I had been having correspondence, to give us their ideas regarding the rules already in force, and to make such amendments as, in their judgment, would make them all right. The following letter from Byron Walker has been lying on my desk for some time, and will explain itself:

I find it quite difficult to make any amendments in a few words that would give my ideas of what the grading should be. Mr. Thompson's suggestions are mainly in the right direction; but I think it necessary, in order that such rules be of practical use, that more definite terms be used with reference to the matter of discolored and unsealed combs. In fact, I see no reason for materially altering the criticism in my article on this subject, published in the *American Bee Journal*, vol. 23, page 817. Certainly more than two grades are necessary to include the bulk of marketable comb honey; but the suggested fourth grade could be dispensed with. I would suggest that combs varying considerably in thickness, but which would otherwise find a place in the fancy grade, be assorted so that they will not vary in weight more than two or three ounces in any shipping-case. I have no doubt that too much stress has been placed upon sections being entirely free from propolis, in order to be ranked as fancy. The fact is, while reasonably neat sections are quite desirable, the suspicion of there being manufactured comb honey on the market is so prevalent, both among grocers and consumers, that at least a slight soiling from propolis will, as a rule, help rather than detract from the sale of even the fancy grade.

Chicago, Ill.

B. WALKER.

The following is the draft of the grading-rules amended by him. By referring to the Washington rules above, the reader will see just where they differ. You will notice that he leaves out some things that are almost impossible of attainment in "Fancy," and makes No. 1 flexible enough to take in the great bulk of the best honey of the bee-keeper.

WALKER'S AMENDED WASHINGTON RULES.

FANCY.—All sections to be well filled, combs straight, of comparatively even thickness, and firmly attached to three sides, the comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with one-eighth part of comb surface considerably soiled or unsealed, or the entire surface slightly soiled. While a slight soiling of sections by propolis should not exclude them from the fancy grade, the sections must be reasonably neat in both grades.

Prior to the reception of Mr. Walker's letter and his rules of grading, I had received a draft of the rules from Mr. B. J. Thompson, of Waverly, Wis., which he had modified to read as follows:

THOMPSON'S GRADING RULES.

FANCY.—All sections to be well filled, combs straight, and firmly attached to all four sides, the comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood. The wood, if stained, to be thoroughly cleaned in every grade.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; comb may be soiled a little by travel-stain, propolis, or otherwise.

Dr. Miller, having seen both Mr. Thompson's and Mr. Walker's drafts, wrote as follows:

After carefully comparing the gradings, putting much faith in Walker's grading as an honest man of intelligence and much experience, and after considerable discussion with Emma, who doesn't entirely agree with me, here's what comes:

FANCY.—All sections to be well filled, combs straight, firmly attached to three sides, the comb unsoiled by travel-stain or otherwise; all the cells sealed except the row of cells next the wood, the outside surface of wood well scraped of propolis.

No. 1.—All sections well filled, but combs uneven or crooked; one-eighth part of comb surface soiled or unsealed, or the entire surface slightly soiled. Outside surface of wood well scraped of propolis.

Mr. Thompson leaves out of fancy "of even thickness," and Mr. Walker says, "of comparatively even thickness." I leave it out entirely. If you have "combs straight" there won't be much trouble about "even thickness," and "comparatively" is indefinite at best.

Both men omit "both wood and," which I think is all right; but by putting nothing in its place they jump to the other extreme, and you will see that allows a man to put in fancy honey all his sections without a knife ever touching one to scrape the propolis. So I add "outside surface of wood well scraped of propolis." Walker comes at it indirectly by saying, "reasonably neat in both grades."

In No. 1 I omit "detached at bottom," as that is not necessary, being already allowed in fancy by saying, "attached to three sides." I think it might be better to word No. 1 thus:

"No. 1.—The same as fancy, only the combs may be uneven or crooked, one-eighth part of comb surface soiled or unsealed, or the entire surface slightly soiled."

The other way leaves it that the comb need be attached only at the top, which would hardly do for shipping. Please understand that this last No. 1 stops at the paragraph quoted.

I've tried without prejudice to say what change would allow such men as Walker and Muth to use the grading; but no amount of tinkering will make it right to call the bulk of the crop fancy and the rest No. 1. It isn't honest, and that's all there is about it.

Emma objects, and with no little reason, to "combs unsoiled by travel-stain or otherwise." If it were *really* fancy it would be all right. But as fancy is really the bulk of the crop, and No. 1 the seconds, it will be impossible to get more than half the sections to come up to the requirement in that particular. It isn't the general thing to take off a super of sections in which every section is snow-white. Some of the comb surfaces are *slightly* discolored before three-fourths of the sections are sealed. A very slight discoloration does not and ought not to rule them out. But perhaps that can stand, as in practice it can not be strictly adhered to.

I don't like any of it, but I think I've tried to follow out the spirit of what you want.

C. C. MILLER.

Marengo, Ill.

[Now, I am not going to say at this time which set of rules is best; but one thing is certain: Before we adopt another set for GLEANINGS, we shall need to know that the set we *do* fix upon shall receive the approval of the brethren who have so kindly shown up the mistakes of the accepted Washington grading. I am not sure that any thing we can patch up of an old thing will be as serviceable as something that has been made by one person and is brand-new. What think you of the first set of rules, or the one originally proposed by Dr. Miller? As for myself I am at present inclined to believe that the Washington grading as amended by Walker or Miller would be as good as any. They would have the advantage that they would be the same as the ones with which we have been familiar, without their objectionable features. Of the two, the Miller-Washington is the briefer. Let's have brief expressions on postals from a large number. The revised rules, to be of any use for this season, ought to be ready for our next issue.—ED.]

RETAILING FROM SQUARE CANS.

IS GLUCOSE A LEGITIMATE ARTICLE OF COMMERCE?

By R. McKnight.

"Selling Extracted Honey;" "Valuable Secrets." Such is the caption over an article published in GLEANINGS over the signature of Mr. Chalon Fowls, and copied into the *American Bee Journal*. Doubtless Mr. Fowls is satisfied he has discovered the secret of selling extracted honey. Let us look up for a moment what he considers these *secrets* to be. It is to be "of the finest flavor, and in color the whitest." These are certainly requisite in the rapid sale of honey. It is to be liquid in form—this is also desirable. Then it is to be put up in flint-glass jars holding a pint each, and in third-pint jelly-glasses. This is not a good way to sell *much* honey *rapidly*. At the present price of honey it is folly to put it up in any kind of package that compels one to sell it to the trade at what Mr. Fowls says he charges for it—23 cents a pint. True, the Mason jar is worth its value to the purchaser; but as a rule people won't buy honey or any other article of food because of the character or quality of the vessel that contains it. It is very necessary that this should be neat, clean, and attractive. I think bee-keepers may settle down to the conviction that, all things considered, tin vessels are the best and most economical receptacles for extracted honey when put on the market. These should be of such size as to meet the requirements of the purchaser. Few people care to buy more than 20 pounds of honey at a time, and five people will buy five pounds for one who will buy twenty pounds. For the general retail trade a 20-pound package is the largest needed. More extracted honey can be sold when put up in from five to ten pound tins than in any other form.

For some years past I have found a seven-pound square tin package the most popular with both the merchant and his customer. A few years ago they retailed readily for a dollar each. I never could understand why the orthodox 60-pound tin is so generally used to put up honey in. It certainly is not a suitable package for the retail trade.

A dozen years ago or so I was in a neighboring town. While there I called upon a grocer who happened to receive an order for two pounds of honey while I was present. He dragged a 60-pound tin of candied honey from under the counter, and through a four or five inch opening in the top he proceeded to extract the 2 lbs. of extracted honey asked for. Before he was through with the job his knuckles were daubed with honey to an extent calculated to make him forswear handling such stuff in future. I then and there made up my mind I would never send such a package to a grocer, and I

never have. The best plan is to put it up in quantities of from 5 to 10 lbs. I am sure the lady who ordered the 2 lbs. I have referred to would have bought a 5-lb. package if the merchant had had it.

When liquefying honey, Mr. Fowls tells us he never allows the water surrounding the vessel containing it to boil. Can he assign any good reason for such caution? It is not wise to allow honey to boil; but honey can not be made to boil by surrounding it, or keeping it surrounded with *boiling* water. It requires a good deal higher temperature than 212° to cause honey to boil.

I should like to enter my protest against the frequency with which bee-keepers (Mr. Fowls included) refer to glucose as "vile stuff." Glucose is not vile stuff. It is a legitimate article of commerce, and its production and sale are as honorable as the production and sale of any other article of commerce when sold for what it is. We are apt to boast of the healthfulness of honey. The sugar of glucose is chemically identical with the saccharine matter of honey. It, too, ought to be healthful.

R. MCKNIGHT.

Owen Sound, Ont., Canada.

[Square cans are used very largely by producers for putting up honey in bulk, in the same way that barrels are used; but, unfortunately, some climates will not admit of the use of these latter, owing to the shrinkage of the staves. In cases where the square cans are used for retailing from, a honey-gate should be used, costing only 15 cts.; and the producer who does not supply his grocer with such a gate is very shortsighted. When a grocer daubs his knuckles as you describe, just because he has not a proper appliance, both he and his customer are liable to become disgusted with the whole business. Perhaps in many instances it would be wise to let the grocer have only 2, 5, and 10 lb. cans of honey, and perhaps he would daub his knuckles any way, for some men are always daubing.]

I believe nearly all our readers will take exceptions to your last paragraph; at least, from a bee-keepers' standpoint it can hardly be regarded as orthodox. In the first place, I can not agree with you that glucose is not "vile stuff." The article that is ordinarily used for purposes of adulteration is hardly fit to put into the stomach of a pig, let alone that of a human being. A few years ago, in testing samples of glucosed honey I made myself sick, and it took me nearly a week to get over the effects of sampling the "vile stuff." It was nauseating, to say the least; and even now it brings to my mind the horribly nasty taste that clung to me for days after tasting it. I grant that there is a glucose of very fine quality that does not taste bad; but we seldom find such used as an adulterant, because the cheaper grade when put into honey looks just as well, and fools the uninitiated just as easily as the better grade.

You say, further, that glucose is a "legitimate article of commerce;" I don't know how you make that out. If glucose were not used for adulterating syrups and honeys it is doubtful if there would be a glucose-factory on the continent. It is true, glucose is sold in bulk for what it is; but to whom, pray, does it go? To the mixers, who will put it into syrups and

honey, cover up its identity, and who will name it either "pure maple syrup" from Vermont or Ohio, or "pure farm honey," etc. If glucose is to be ranked as an honest product in the sense that honey, flour, and meat are, why do we never see it advertised in the general run of papers? In common market quotations it is never mentioned. Is not this fact alone enough to convince any one that this stuff goes directly from the factories into the vats of those who mix it with the product of honest labor to rob the farmer to just the same extent they enrich themselves? Did you ever hear a grocer recommend an article because it contained glucose? Does he not always carefully conceal that fact if he can? It signifies nothing to say that it is a legitimate article of commerce. So are whisky and opium, but surely in this case the altar does not sanctify the gift.

I have been told that glucose has been used to preserve dead bodies; that, when immersed in the "vile stuff," said bodies will keep indefinitely. There are other "vile stuffs," such as alcohol, etc., that have the same property. But alcohol has a few legitimate uses; but glucose, beyond the possible one mentioned, is used first, last, and all the time for cheating and defrauding, unless when it is used for making beer or spirituous liquors.

I will grant that the sugar of glucose is chemically identical with the saccharine matter of honey. Chemically the diamonds in the British crown are identical in substance with charcoal.—Ed.]

BEE BUZZINGS.

EXTRACTING.

By E. H. Schaeffle.

I prefer to take off honey very early in the morning. Over night the honey has all been evaporated, and there is then no thin honey requiring after-evaporation, or souring for the want of it; the bees are not flying, and so do not become excited. During the day the combs are all extracted, and returned late in the evening, thus preventing robbing as the combs are all cleaned up over night, and do not attract the robbers on the following day. As a rule I leave an unfinished comb in the super for the bees to store in during the day's absence of the other combs.

EXTRACTOR.

I use a Cowan, and should like it still better if there were a groove in the bottom, where the gate enters the can, so that all of the honey would drain out with the can standing level. Frequently a black mixture of iron and honey oozes out of the bottom bearing, and is a nuisance to scoop out of the honey. This, I think, could be remedied by reversing the position of the bottom pin and bearing, and using ball bearings placed above the honey. As the extractor is now built, if five gallons is allowed to accumulate, the honey works into and the iron out of the bearing, and trouble follows. It is not possible to oil the lower bearing; but with ball bearings this would not be required. The machine would run far easier, and, with a more rapid gear, make extracting less laborious.

With the present slow gear the operator must, if the honey is as heavy as that which I am extracting, run at his utmost speed. I do not find it necessary to evaporate my honey after extracting, as I allow the bees to do that for me. While I may not secure quite as large a crop in consequence, I am satisfied it is enough better to offset the loss. I find a light block and tackle a great convenience in extracting. With it I can pick up the extractor, when full, place it on a table, strain out the honey, and drop the extractor back on to the floor, without any special effort.

FEEDING.

In a recent number of GLEANINGS a subscriber advised the use of honey only in feeding. Recently there has been a pure-food crusade in San Francisco. One of the city's leading grocers was arrested, fined, and greatly injured in trade by an analysis showing the honey he sold to contain a small per cent of cane sugar. Now, this grocer, to be sure of the purity of the honey he sold, bought direct from an apiary whose owner guaranteed the purity of the honey under a penalty of \$150; but the chemist said "cane sugar," and the grocer suffered; the bee-keeper lost a good customer (yours truly got him). I feed only pure honey, and fear no honest analysis.

It is evident that the bee-keeper had fed sugar syrup in the fall or spring feeding, and the bees, when crowded, had extracted a portion of it to make room for the queen, and carried it up into the super, where it was thrown out with the other honey, and while the per cent must have been exceedingly small, the chemist found it in his test, and the fines and losses followed.

HONEY YIELD.

February, March, and a portion of April was an almost continuous shower, with an unusual amount of bloom in April, and one of the best spring flows that the State has ever produced. Since then it has turned hot and dry, with the result that reports from all parts of the State agree that the flowers are withered and gone, and the remainder of the season will be very light, and in some sections feeding will be required to carry the bees over to the fall flow. This in most sections is barely sufficient to furnish the bees with a good supply of winter stores. With me it varies. Some seasons my fall flow is better than that of the spring; as a rule, however, it is only fair.

PRICES.

The dealers write me that I must be mistaken about the yield, as the bee-men, jobbers, and country storekeepers are all trying to force their honey on to them in large amounts. This, I think, is the result of the past short seasons. The bee-keeper is hard up, and hastens to realize, fearing a drop in price, with the result that the price is forced down, notwithstanding the

crop is small; and now that glucose is barred out, the consumption is double that of former seasons.

TAKING OFF SECTIONS.

Smoke excites the bees, and causes them to uncap the honey, as does any rough handling. I find the following method works nicely: Early in the morning pry up the super containing the sections, doing it as gently as possible; move along to the next hive; and when you have three or four loose, go back to the first hive, where the bees have quieted down, and quickly raise the comb super; slip on the bee-escape board, and replace the super. The bees are slow to move early in the morning; and if care is taken in prying up the super, giving them time to quiet down, and skill used in slipping on the escape, the bees will not become excited, no caps will be cut, and the bees will work out as nicely as though they had been driven wild with smoke, and remain gentle.

PRIMING SECTIONS.

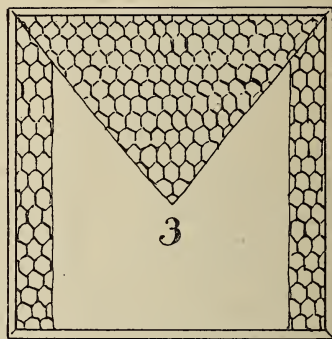
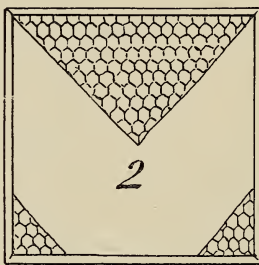
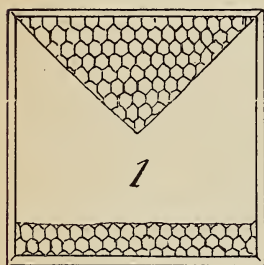
By reference to old articles of mine I think you will find that I used both a bottom and lower corner starter. With me the bottom

are unnecessarily heavy. A steel fire-box and a perforated cover are all that is required, which, with a tin bellows, would decrease the weight a half.

Murphy's, Cal.

[We formerly made extractors with the groove in the bottom where the gate enters the can. After we changed to our present plan we found that it is not only cheaper, but bee-keepers appreciate it. The directions that go with the machine are to screw it down so the honey-gate will be directly over the bung-hole of the barrel or other receptacle. It is not designed to let the honey accumulate in the can. When that is desired we make deeper cans and raise the bearing up a few inches. Of course, we have to charge extra for such change. The great difficulty with the old grooved bottom was in cleaning. With the present plain bottom slanting toward the honey-gate, every portion of it is "getatable."

The Crane smoker will not go out, usually, if you get it well going in the first place, and use the right kind of fuel. The Corneil, however, seems to have the preference nowadays; and while it does not give as strong a blast it will never go out as long as there is fuel to burn and of the right sort. We prefer the stringy sawdust that comes from making the hand-holes in hives. Planer-shavings answer nearly



starter had a bad habit of curling over. The corner starter seemed to work for a time, but in the end I found there were more of them gnawed out by the bees than there were left standing, so I left both bottom and corner starters out. At present I use a strip down both sides, and a triangular piece in the center.

BEE-SMOKER.

I found my Crane smoker had a bad habit of being out just when I needed it badly. To remedy this I punched a $\frac{3}{4}$ -inch hole in the front, just above the floor, and covered this with a piece of finely punctured tin. Now when I get the smoker going it keeps a going. For convenience in handling I have a strap nailed across the top, with sufficient room under it to slip the hand in. I find the strap comes in very nicely in going to and fro in the apiary after combs when extracting, as with it I can hang it on to the handle of the barrow, and it always keeps right side up. The body of the bellows should be of tin to make it lighter. Smokers

as well. Small sticks of stovewood we have used some, but very much prefer the loose material, as it gives a denser smoke.—ED.]

THE NEW DRAWN FOUNDATION IN ENGLAND.

APIS DORSATA, BY ONE WHO HAS SEEN THEM IN THEIR NATIVE HOME.

By F. W. L. Staden.

Mr. Root:—I am in receipt of your letters of May 1st and 17th. The sample package of foundation, containing a small piece of the new drawn comb, also came safely to hand. With regard to the drawn comb, I congratulate you on your marvelous achievement, which must ever stand out in bee-history as a record of advance. I think the new drawn comb will prove particularly useful in the rapid harvesting of honey, and also for the prevention of "pop-holes," which are frequently nibbled

through foundation, next the wood, in frames and sections. The use of the new drawn foundation will make the adulteration of comb honey hardly any easier than in the past. It is always possible for unscrupulous persons to get the bees to fill their combs with syrup, whether drawn comb, ordinary foundation, or no starter at all be given.

I am pleased to see in GLEANINGS that you are taking practical steps to sift the *Apis dorsata* mystery, and wish you every success. As, perhaps, you know, I took a voyage to India last winter for health, and spent a month there taking specimens and getting information about the various types of bees to be found in the country, especially of the genus *Apis*. I set out with the firm belief that any of the Indian honey-bees, to be of any value to us, in our climate at least, should come from the mountains and not from the plains; and after my month's tour I felt more than ever convinced of this. Now, *A. dorsata* is essentially a plain bee, though I did meet with a deserted comb at 2000 ft. elevation on the southern slopes of the Himalayas; and I am almost afraid that you will make nothing of it—at least in honey-producing. If properly managed in the Southern States it might give wax, but I doubt if you could make Weed foundation of quality as at present with *dorsata* wax. I met with *A. dorsata* fairly commonly in a ramble taken at Siligari at the foot of the Himalayas. The sky was cloudless, the air still, and the thermometer stood at 75° in the shade (this in January), but *A. dorsata* did not see fit to appear for more than three hours in the day; viz., from 10 A.M. to 1 P.M.

My heart sank at first sight of a *dorsata* worker on the wing. With its heavy, dusky wings it emits a low-pitched hum, indicating the slowness of vibration. It goes from flower to flower in a lazy, unsystematic way, frequently pausing for rest on a prominent leaf, forcibly calling to mind Cheshire's interesting illustrations of the comparative feebleness of large creatures. To say that *A. dorsata* bears the same similarity in behavior and appearance to an ordinary honey-bee that a hornet does to a wasp would give a very good idea to an observant Englishman of the "nature of the beast."

I made a dissection of two of *A. dorsata* on my return, and the following figures may be of interest to you. I have had to suspend all this kind of work for the present until the winter.

	L'gth of body.	Approx. l'gth of tongues (ligula).
<i>A. dorsata</i> (from Siligari)	15 m. m.	4 m. m.
<i>A. mellifica</i> (England)	12.5 m. m.	3.6 m. m.
<i>A. florea</i> (Calcutta)	7.8 m. m.	1 m. m.
<i>Bombus hortorum</i> (England), worker	15 m. m.	9 m. m.

I brought a case of specimens of wild bees back, many of them of exceedingly interesting structure, which I have not time to enter into

here. I have a large collection of wild bees from many parts of the world. If you know of any one in the Northern States who takes an interest in these things would it be too much to ask you, when communicating with him, to give him my name and address, as I should be pleased to make exchanges? I have a correspondent in New Mexico, and several in Canada, but none at present in the Northern States.

Ripple Court, England, June 8.

[This is very interesting and valuable, especially the comparative measurements of *Apis dorsata* and other bees. It would appear from the foregoing that their tongues are but little longer than those of the common bees, while the tongue of the bumble-bee is more than twice as long as that of the so-called giant bees. The claim has been made that these bees would be especially valuable in this country, for the reason that they could get honey from red clover and other flora having deep flowerets; that they would be able to do for us in the way of fertilization what the bumble-bee does, and more. If the comparative measurements of bees' tongues are correct the claim is rather flimsy. We should be glad to hear from Mr. Sladin further on the subject.]

After the article above was in type, the following, from our old friend and correspondent, A. Bunker, the one who has written in years gone by, on the subject of *Apis dorsata*, and who has been living right in their native climate for a good many years, is especially opportune and valuable:

My dear Friend and Bro. Root:—Once more, after four years' absence on the Burman field of missions, I am permitted to greet my family. I find a large place empty by the death of my boy while away. God has, however, given me many spiritual children to make me glad. We baptized 457 converts during the last two years; added over 1600 to the attendance at our Sunday-school, and organized five churches during the last year. Praise the Holy Spirit, who gives the increase.

I see considerable speculation about *Apis dorsata* in your journal. Having studied that bee in its native habitat I am afraid it can not be domesticated more than it has been. It is a migratory bee. During the dry season it travels south, and takes up its home, usually in the same place, from year to year, among great flowering trees. As the rains come on, it leaves for the North, and I have found its home in high mountainous tracts, where the natives plant stakes in the side of a hill horizontally, digging a ditch under them, and leaning a few boughs against the stake for protection.

The amount of honey gathered by this bee always seemed to me to be small when compared with that gathered by other bees, and taking into consideration the size and numbers of the bees. It is possible their habits can be changed, but I doubt it. If any one wants to study them for himself tell such a person to go to Tongoo, Burma; get a camping-out kit, and go back into the forest 20 miles to the east of

that city, in December, and he will find many swarms for study; or, if he will apply to the missionaries at Toungoo he will get guides who will take him to the bees, and secure swarms for him if he wishes them to do so.

Bro. Root, I prize your Home Papers very highly. They are practical; and religion, if not practical, i.e., reduced to practice, is not worth much. Long live GLEANINGS. Its editor, A. I. Root, *will live forever*, because Jesus lives.

A. BUNKER.

54 Willow St., Providence, R. I., June 24.

[I believe there is no one in the world who is more competent to speak on the subject of the general characteristics and habits of *Apis dorsata* than is Mr. Bunker. Both he and Mr. Sladen, as well as others, express strong doubt that these bees can ever be domesticated. It is claimed they could be, and be kept in common hives in this country. It looks as if this claim were made in the interest of a fat government job for some one; and if so, bee-keepers all over the land should enter a most decided protest against the use of public funds for this purpose. The missionaries already in or about to be in the field, Mr. A. Bunker and Mr. W. E. Rambo, can conduct experiments, and, if necessary, ship the bees to this country, at a merely nominal cost—a cost so low, in fact, that the expense can be borne easily by private enterprise.

We had lost sight of Mr. Bunker; and had I known where I could have written him I would have asked his opinion long ere this. Now that we have got hold of him again, we shall hope for his advice and co-operation, in connection with the proposed efforts on the part of Mr. Rambo, in securing these bees.

I am sure our readers will deeply sympathize with Mr. Bunker in the loss of his son. At the same time, we shall also rejoice over the grand and noble work that he has done through Christ. The self-sacrificing work of such a missionary leaving home, family, and friends, to carry the gospel to heathen lands, to express it mildly, commands our admiration. Could any work be more noble and unselfish?—ED.]

THE MONGOOSE IN JAMAICA; WOULD THE IMPORTATION OF *APIS DORSATA* BRING DIRE RESULTS?

I send you a clipping from the *American Field*, in reference to the mongoose in Jamaica. I fear *Apis dorsata* might prove to be a similar curse to bee-keepers in this country. I for one am satisfied with Italians.

The introduction of the mongoose into Jamaica marks one of the standard instances of unexpected results following upon an attempt to artificialize the process of natural selection, and takes rank as a warning with the plague of rabbits and thistles in Australia, says the Academy. The mongoose was introduced from India, in 1872, in order to abate the pest of rats which infested the sugar-canes; and after performing this salutary duty it increased and multiplied to such an extent that not only the rats and mice but most of the living species of the island were threatened with extinction. Poultry suffered first; but the depredations extended to young pigs, kids, lambs, newly dropped calves, puppies, and kittens. Game of all kinds was attacked, both living and in the egg. The marauder ate even fish, and made such a specialty of snakes, ground-lizards, frogs, turtles, and land crabs, that many kinds of these entirely disappeared. Finally the mongoose developed a ravenous desire for bananas, pineapples, young corn, avocado pears,

cocoas, yams, and the sugar-canes, which it had been called in to protect, winding up its tastes with an appetite for salt meat. The result was a wholesale disappearance of species. A few birds, like the ground-dove, had the sense to shift their breeding-places to the tops of the prickly cacti, where they were safe; but other animals, and the reptiles in particular, suffered so severely that many kinds were believed for years to be extinct. As a consequence there arose yet another plague. Insects like the ticks and "jiggers" (or chiggers), which used to be kept down by the snakes, increased so overpoweringly that men and cattle were grievously infested. One could not walk without being covered with them. The victory over the island remained with the tick and the mongoose, until, within the past year or two, a fresh stage set in. The mongoose suddenly began to be less plentiful, and it was found that he had fallen victim to the tick. The results of the diminution are shown in a gradual reappearance of other beasts, birds, and reptiles. Among the snakes there is a very marked increase; and even the ground-lizard, supposed to be quite extinct, has become common again. The balance of life has begun to reassert itself, and naturalists will watch with curiosity for a complete reinstatement of the previous fauna. The renewed depredations of rats are hailed as an advent of salvation, and, odd as it may sound, the increase in numbers of the crocodile is taken as a happy omen. The Jamaicans are not likely to make further experiments in this interesting domain of natural history, but will adhere in future to such present evils as they have. For them, at any rate, it has been no "imaginary mongoose."

Chambers, Ala., May 24.

J. M. CUTTS.



CLIPPING QUEENS' WINGS.

Question.—Do you believe in clipping queens' wings? If you do, will you tell us in GLEANINGS all about it—how you clip, why you clip, etc.? I am told by a neighbor that it is too much bother to hunt up the queen, and that it is a delicate job to clip her wings when she is found, and that there is more harm than good in doing it, anyway. Is this neighbor right?

Answer.—While there may be a grain of truth in what your neighbor tells you, yet when we come to "count noses" the greatest weight of evidence from the "dollar and cent" apiarists of our country is in favor of clipping queens' wings; and as I believe in so doing I will give some of the reasons for such a belief.

By having the wings of all queens clipped you have the bees perfectly under your control, and can handle them as you wish, separating them with pleasure when two or more swarms cluster together, and have them without climbing trees, etc., on the returning plan, when they come singly, they virtually hiving themselves. In using this plan all you have to do when the swarm issues is to step to the entrance of the hive with a little wire-cloth cage into which the queen is let run, when the cage is stopped and laid in some convenient place. The old hive is now moved to a new stand, and a hive fitted for a new colony set in its place. In from a few minutes to half an

hour the bees miss their queen and come back to her or their supposed old home, which was there when they went out. On changing hives the queen was placed near the entrance, so that, as soon as the bees returned, they might find her, and not scatter about the apiary to other hives, as they sometimes will if they do not have ready access to their queen. As they return they will commence to run into the new hive with fanning wings, when the queen is liberated and goes in with them. I have followed this plan for more than a quarter of a century, and know it to be a good one, as good yields of honey will testify—no climbing of trees, cutting off limbs, or lugging a cumbersome basket or swarming-box about. It is straightforward—remove the old hive to a new stand, put the new hive in its place, and the returning swarms hive themselves with little or no trouble, save the releasing of the queen.

Again, I clip the larger part of the queen's wing off, so that she may be the more readily found. In making nuclei, changing frames of brood and bees, extracting, making swarms artificially, if we wish, etc., if you find the queen you can always know that she is just where she belongs, and not in some place where she ought not to be. By having her wings cut short you can see her golden abdomen as soon as your eyes strike the side of the comb she is on.

Once more: There is no loss of bees by going to the woods when the queen's wings are clipped. That bees do go to the woods, all can assure themselves by reading the reports given in our various bee-papers, if they do not know of the same by actual experience. The bees may try for the woods, and they often do; but as soon as they miss their queen, back they come, for they realize that swarming is of no purpose to them unless they have a queen with them to repopulate their home after *they* die of old age. Many a time have I had swarms start for the woods and be gone from sight and hearing for some little time; but as soon as they missed their mother, back they would come, setting up a joyful hum when they found her.

But how to find the queen, and how clip her wing, is something we must know about if we practice this method. The time of the year in which we undertake this matter has much to do with the pleasure of this work. If we wait till just as swarming is upon us, and attempt to hunt up a queen in a hive that is overflowing with bees, and especially one which will probably swarm in a day or two, when the queen has ceased her laying pretty much, so that a burden of eggs need not hinder her from flying with the swarm, and thus cause her to become no larger than she was when unfertile, we shall well speak of the matter as "a bother;" for to find a queen under such circumstances often baffles the most experienced apiarist. But if

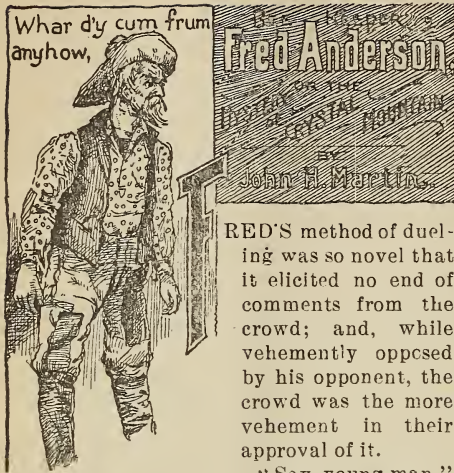
we do this work in fruit-bloom, when there are comparatively few bees for the brood they are covering, and the queen very large from her prolific egg-laying, using the time from 9 A. M. to 3 P. M. to look for queens, it will be a rare thing that one will evade the efforts of even the novice. Take along an empty hive and set it where you can easily place the combs, as handled, into it, when you will proceed to open the hive, using just as little smoke as possible—only just enough (or none at all) so that the bees are kept from stinging. Do the work carefully, so as not to jar the hive or frighten the bees. Carefully lift the first frame; and as it comes from the hive, glance at it to see if there is brood in it, for it is useless to look on combs having no brood in them if you have not stampeded the queen by careless operations.

As soon as you find brood, look closely for the queen, glancing first down the side of the comb next to you in the hive, and then on the opposite side of the one you hold in your hand, holding the comb a little obliquely as you look, for the side of the queen gives a better view than straight on her back. As the combs are taken from their hive, set them in the one you brought, so that, should you not find her the first time over, you will be likely to do so in setting them back. In this way, after a little practice, you will have little or no trouble in finding any queen, even should it be a black or German queen. Having found her I take her by the wings with the thumb and forefinger of my left hand, when, with my right, I place the sharp blade of my jack-knife on the part of the wings I hold in my left, lowering both hands to within an inch or so of the tops of the frames, when I draw the blade just a little, thus severing the wings, when the queen runs down into the hive the same as if nothing had happened. There is no danger of cutting fingers if you stop drawing the knife as soon as the queen falls. Some use scissors; but after clipping off a leg or two with them I took to the plan here given.

J. R. W., III.—Drones from pure Italian queens vary all the way from black to quite yellow, while the bees should be uniformly marked, having three distinct yellow bands. The fact that drones from a yellow queen do not show any bands whatever is no evidence that the queen is not pure. It is also true that queens vary just as much as the drones in color. See paragraph on this subject on page 29 of our catalog.

CONVENTION NOTICE.

The Texas Bee-keepers' Association will meet at Cameron, July 16, 17. All parties will purchase one-way ticket, paying full fare, take receipt at time ticket is sold, and these receipts, after having been signed by the secretary at Cameron, and stamped by agent, will authorize return tickets at one-third fare, provided there are fifty certificates presented.



RED'S method of dueling was so novel that it elicited no end of comments from the crowd; and, while vehemently opposed by his opponent, the crowd was the more vehement in their approval of it.

"Say, young man,"

said Slim Jim, "whar d'y come from, anyway?"

"I came from Maine," replied Fred.

"Jest as I mistrusted," said Jim; "fur nobody but an infernal Yankee'd ever think of sech a way of fitin' as that. My way is pistils, and it's pistils or nothing."

"I don't see that there is any difference as to how we fight, if it is only with deadly weapons," said Fred; "and I'll guarantee that the bees are as dead shots as any pistol you can produce."

"Yes," said Jim, "they may be deadly to me, but how's it to you? You mout be one of them fellers that bees won't sting."

"Well, then," said Fred, "I would have about the same advantage that you would with a gun. You are a dead shot, and I am not. I had a right to choose my weapon, and will fight with no other; am I right, gentlemen?" said Fred, turning to the crowd.

"Right! right!" assented the crowd.

Fred knew that, in drumming bees from a hive, they would fill themselves with honey, and be comparatively harmless, and could be thrown promiscuously into a crowd, and no stings result. But to those ignorant of the traits of the bee, the idea was full of terror; and Slim Jim's view of it was of the nature of a lingering death.

Fred was thoroughly opposed to dueling in every form; and in making his proposition he sought to make as much of a burlesque of it as possible, and was happy over his success; for after much talk, Slim Jim, after many imprecations against the "onusual ways of the infernal Yankees," made an ignominious withdrawal.

With Slim Jim out of the way, young Armstrong directed his attention to Dr. Hayden. The doctor told the story of the valley, his finding of it through the Indians, etc.; and when he had concluded, he said, "Now, if you doubt my word, here are my companions. Ask them."

Sam Johnson, in giving his experience in the valley, dwelt more upon what Dr. Hayden had done for him morally than he did upon a description of the valley, and concluded by saying, "Dr. Hayden am elevated me from de mire ob de dirty slough to de beautiful heabenly gardens; and though de beautiful valley am gone, de heabenly gardens remain in my soul, glory hallelulia!"

Fred interested the crowd with a description of his first acquaintance with the doctor, and of his wonderful success with bees in the valley.

"Well, now, by snumm," said one of the crowd; "that explains a mystery. I've hunted bees all around Crystal Mountain, and the lines always led me right into them glass knives. I calculated there was a big cave in there somewhere; but instead there was a whole valley, and who'd a thought it?"

Gimp Dawson gave some of his experiences with Sam Johnson, and said:

"When I was fust pitched inter the valley I hated that ar' nigger," pointing to Sam; "but afore I came out I come to conclude that, though he's black, thar are some white streaks in his heart. D'y see that ar' scar on my hand, and that on my shin" (pulling up his trousers)? "then thar is another on my hip—got cut on them glass knives. Wall, Sam done 'em up like a horsepital man, and on the hull we had a happy time, as Sam says, in de heabenly valley."

When Alfaretta told her story there was a visible effect upon the crowd. Many had heard of and a few had seen the "mad beauty" of the Sacramento; and now to have her in their midst, sane, and talking to them so pleasantly, was too much for them, and they broke, from murmurs from one to another, into a hearty cheer, and the cheer was as pointed for Dr. Hayden as for Alfaretta.

"Well, Dr. Hayden," said Pete Armstrong, "we had an impression that you were an evil genius, and an all-round bad man. Now, there is such a man and a murderer somewhere around that mountain. My father was shot in cold blood; that Dutchman Kishinka was also killed, and no telling how many men have been driven from the vicinity by burning of cabins or killing of stock."

"But why should I do such things," said the doctor, "while living peacefully inside the valley? No one was injuring me, and I am not a vicious man, as you have now learned. As to who has committed these crimes, I have nothing to say; but if you look sharp you may now find some one outside the valley who is interested in running people off a certain tract of land."

There was considerable quiet thought over the matter, and finally Pete Armstrong said, half to himself, "If I only knew!—but, wait: there is an Irishman squatting on a parcel of land on

the west end. We will see what becomes of him."

It was well into the evening before the conference ended; and that which started out with a prospect for a duel ended in a general peaceful hand-shake, and our party of homeless valley exiles were cared for in the combined grocery store, hotel, and saloon.

Late in the evening parties came in from Ukiah, and brought news of a startling nature about the earthquake. The State Capitol building at Sacramento had been demolished, and at Napa and Winters there had been a general wreckage of buildings and loss of life.

his early life and schooldays with Clarence Bull; "and now," said he, "it seems strange to know of him as Buell."

"But, doctor," said Alfaretta, "do you not think Buell much the prettier name? and only one little letter makes the change."

"Oh, yes!" replied the doctor; "it does sound pretty, but not so strong. Bull has an aggressive sound; and when you change it to Buell you sort o' knock the horns off, and make a muley of it; but, I beg your pardon for my blunt speech," said the doctor, as he observed a trace of a pout on the fair lips. "I will try to conform to the new order of names. It is



"A VERITABLE CONCERT WAS ENJOYED."

"Of course," said the doctor, "these are but rumors, and the damage can scarcely be expected to be as extensive as reported."

The next morning the party proceeded leisurely on their journey, and followed the old trail over the mountains toward the Sacramento River.

It was a constant cause of wonder to Alfaretta as to how she could have traversed those regions alone and in the night.

"Why," said she, "I should be afraid to travel this road alone in the daytime; but pony Jack, you say, was my guide and guardian. Dear Jack!" said she, patting the pony on the neck.

During the forenoon, as they rode along, the doctor conversed with Alfaretta much about

very handy to address you as Miss Buell; but should I see my old friend I fear I should say Bull to him unawares."

"Well, doctor," said Alfaretta, with a smile, "my papa is good-natured, and you shall have that privilege. I anticipate the great pleasure it will afford him to meet you."

After the noonday lunch the doctor relapsed into silence, and rode some distance in the rear. Fred never enjoyed himself better than during that afternoon ride. Their pace was not rapid, for the ponies packed with the camp material could travel no faster than a walk. The homeward journey was a happy one for Alfaretta, and as much so for Fred, for he felt as though he had been in some degree instrumental in restoring his fair companion to health again,

and he knew there would now be joy in the Buell home where there had been sadness before. Their exuberance of spirits found expression in snatches of song; and around the campfire that night a veritable concert was enjoyed, Sam contributing an important element to it with his plantation songs.

The next day, in his conversation with Alfaretta, the doctor dwelt much upon filial love, and said:

"Alfaretta, I suppose that, after your recovery now, you feel the same love for your parents as before."

"Love them!" said Alfaretta. "Ah, doctor! It seems that I should love them more and more. Dear mamma and papa, always so tender, so kind, and the agony they must have endured these five long years!" and she brushed away a tear.

Again the doctor rode a long time in the rear.

He called Sam to his side, and their conversation was earnest and long. That evening the doctor was quite jovial, furnishing his quota of entertainment with reminiscences of his South American travels.

When Alfaretta retired to the little tent and cot provided for her, the doctor took her by the hand and bade her good-night.

For a long time Dr. Hayden sat gazing into the campfire. Fred addressed him a couple of times, but he seemed as abstracted as when Alfaretta first entered the valley. Fred, realizing his mood, rolled himself in his blanket and was soon sound asleep.

It was past midnight when Fred was aroused by a gentle shake. Upon opening his eyes Sam Johnson was kneeling beside him. In an undertone he said, "Fred, de doctor wants to see you jess beyond de sycamore-trees yonder. I guess he have suffin' to say to you."



Look out for irresponsible or new commission houses. They will offer big inducements and talk big about their ratings. They are still abroad in the land, and are waiting to rope you in if they can.

It is reported that the glucose-factories have formed a trust aggregating two millions of dollars. We bee-keepers hope this trust will put the price of the stuff up so high that it will not pay to use it in honey. Sometimes a trust is a good thing. Perhaps this will be an example.

THE convention of bee-keepers which is to be held in Buffalo, Aug. 24-26, will be a big one, from present prospects. The unusually heavy flow from clover throughout the country, and the very low rates of travel (one cent a mile) are two of the elements that will contribute to make the next meeting of the United States Bee-keepers' Union a grand success. Plan to go if you possibly can.

THE following clipping was sent to us by some unknown person. It is a gratifying piece of legislation, and we hope it will be contagious in our different legislatures until they all "catch" it as severely as the law-makers in Vermont did. It is just what we need:

One of the shortest laws we have seen is the following, which was passed by the last Vermont legislature, and approved Nov. 20, 1896:

SECTION 1. If a person sprays or causes to be sprayed, or puts or causes to be put, any Paris green, London purple, or other poisonous substance upon fruit-trees while in blossom, he shall be fined not more than \$40 and not less than \$10.

SEC. 2. This act shall take effect from its passage.

This law was passed at the request of the Vermont Bee-keepers' Association, which asserted that honeybees may be poisoned by visiting trees that are sprayed when in bloom. This assertion is, doubtless, correct; and since it is not necessary to spray fruit-trees when in bloom, this law will not prove injurious to fruit-growers. The best advice now is to spray after the blossoms fall, since we can then do most injury to the insects.

This goes to show that State and National associations will be heard if only the right methods are employed.

JUDGING from present prospects it looks as if there were going to be an enormous crop of honey from white clover. The tendency on the part of a good many will be to rush their honey off to the cities, and, of course, this will make a glut on the market. Bee-keepers ought to make every effort possible to dispose of their honey around home. Create a home demand. Make it as attractive as possible, and help the grocers to sell for you. In the next issue I will tell you about how to draw a crowd around a grocery window. I would tell you now; but the boss printer says, "No more room."

OUR BASSWOOD OUT-YARD.

It has been a very noticeable fact, during the white-clover year, that our home-yard has been much overstocked. During those seasons when we have a flow from basswood, the difference is very much less. Notwithstanding there is only a couple of trees in our whole orchard that has any buds on it, it seemed wise to "relieve the pressure" in the home yard by removing some of our best colonies there. The wisdom of this move was almost instantly apparent. Those same colonies at the home yard were gathering honey very slowly; but almost on the first day in the new location they began to pile in the honey. In four days they almost completely filled full-sized eight-frame sets of

extracting-combs. At the rate they were storing at the home yard it would have taken them almost two weeks. As the pressure does not yet seem to be "relieved" in our main apiary, we expect to take down another lot of colonies.

The home yard is located on one side (west side) of the town, and as the town is a mile wide and long the bees have no pasturage except on the west side. Then besides there are something like 150 colonies.

OFF TO CALIFORNIA.

"TIME and tide wait for no man," and the time to start for the Christian Endeavor convention at San Francisco has come. Business at the Home of the Honey-bees is still booming, and it is necessary to continue running our factory day and night to keep pace with the orders which come by wire as well as by mail. Usually business has slackened up so much by this time of year that there is opportunity for vacations. Most of them will have to be deferred a little this season. The San Francisco convention can not be deferred, and, having made my plans to go, I am off, feeling sure that the wants of our many friends will be carefully and promptly looked after by the many faithful helpers left behind.

I expect to be in Salt Lake City July 3d to 5th; Reno, Nev., 5th; San Francisco, care of Mechanics' Pavillion, July 7th to 14th; Los Angeles, care John H. Martin, box 152, from 15th to 19th; and, unless I change my plans, I shall be back to Medina by July 24th. I hope, in later issues, to tell something of my trip, and may also bring you some views, as I take along a Kodak with me. J. T. CALVERT.

BETTER PURE-FOOD LAWS.

A SHORT time ago I indorsed the suggestion, made by some of the members of the new Union, that its first work, as soon as its funds should be available, should be to work for the passage of pure-food laws in every State in the Union where such laws were needed. I suggested that, in the city of Chicago, where adulteration is practiced more extensively than in any other city (for the reason that the State lacked a good pure-food law), the Union begin its work in Illinois first; and that C. P. Dadant and James A. Stone should be the men to buttonhole the members of the Illinois Legislature. In referring to this in the *American Bee Journal*, Mr. Dadant says:

Mr. Root has evidently more faith in my capacity as a lobbyist than I have myself, for I would make a sorry politician.

But, let me ask, Is it really necessary to have more laws than we now have to prevent the sale of glucose under the label of honey? Can a man sell you salt for sugar, or dust for pepper, garlic for onions, or silver for gold, with impunity? If so, we are not a civilized race, and all the vaunts of the so-called progressive men are empty bubbles.

I am not a lawyer, and perhaps my reasoning goes astray; but, in my opinion, we need less laws than action.

I have no doubt that, if such laws as are already on the statute-books were rigidly enforced, the adulteration evil would be largely curtailed. But I understand the laws in Illinois are not as strong as they might be, or at least have been so garbled, or amended in the interest of the adulterators of food, that they are practically a dead letter, and that this is the reason why adulteration in Chicago is much more rife than in New York, where there are better laws. In Cleveland, for instance, it is very risky business to handle adulterated honey, or, in fact, in any city in Ohio, *because* we have good pure-food laws and an energetic food commissioner. The daily papers have contained accounts of the good work already done.

Let there be an equally good law enacted in Illinois, and efficient officers appointed to see that such laws are enforced, and the adulteration evil will begin to wane at once, just as it has done recently in California. In this latter State, you will remember that the effect of the pure-food law was almost instantaneous. I do not believe it is so much the *lack* of action as it is the *lack of good laws* to make an action, when begun, *result in something*. An action backed by a weak law seldom amounts to any thing.

I have every confidence in Mr. Dadant's capacity. The henchmen of the food-adulterators have done so much lobbying that it is time, or will be, when the new Union has funds to back it, to do some lobbying too.

CANE SUGAR IN HONEY.

THE following letter received from Mr. W. A. Selser, an expert analyzer of honey, will explain itself:

Mr. E. R. Root:—In your issue for June 15, page 457, you make a statement that is not correct; and, knowing you are misinformed, I want to set you right. As you may know, I have taken a special course in analytical chemistry, in its bearing on honey; in other words, I consider myself a honey specialist. When honey shows 10 per cent of adulteration with cane sugar, it does show downright rascality, and proves the adulteration by man's agency of 10 per cent with cane sugar. I consider a man a rascal if he steals 10 cents from my pocket or 75 cents. I see no difference, except that the 10 cents won't do him much good, neither will honey adulterated with 10 per cent of cane sugar. I can explain just where this mistake occurs. It is in mixing up chemical and commercial terms. Pure honey (or nectar either) does not contain any cane sugar commercially speaking; that is, there is no sugar of any kind, as sold in the market, that is found in pure honey; but there is a very large percentage of sucrose, and sucrose is a chemical term for cane sugar, but it is not the cane sugar of commerce, under any circumstances. If you ask a chemist what sucrose is he will tell you cane sugar, but also tell you, not as you understand cane sugar of commerce, and has not the same chemical properties by any means. I am very sorry that another chemical word has ever been adopted to distinguish the difference.

I have been doing some expert work on honey adulterations for parties in comparison with general chemists, and my analysis has proven the most satisfactory. We also find a large percentage of what chemically is called reducing sugar in pure honey. This is another purely chemical term. Kindly correct your item and let the bee world understand that there is not one per cent of cane or

common sugar in pure honey. In this statement I defy contradiction. WM. A. SELSER.

Wyncote, Pa., June 22.

In referring to Wiley as authority for the statements I made on page 457, I had reference to a special bulletin on the subject of honey and syrup adulterations that was issued in 1892. The chief chemist, in speaking of the properties of pure honey, says: "The amount of cane sugar varies from nothing to eight to ten per cent, according to quantity of cane sugar in the nectar, and the extent of inversion to which it is subjected in passing the organism of the bee." In September of the same year, in *GLEANINGS*, page 688, Prof. Cook speaks of the difficulty of detecting cane-syrup adulterations, especially if they have passed the organism of the bee.

It may be, as Mr. Selser points out, there is a confusion in terms, and that the cane sugar of the market is different from that referred to by the chemist. The point that I made, however, still holds good—that, if one is dishonest enough to adulterate at all, he will not stop at 10 or 15 per cent, but will put in enough to make it pay. It does not seem right that small percentages of cane syrup or sugar, when found in honey, should be taken as absolute evidence of fraud, either on the part of the dealer or the producer. Witness, for example, the case spoken of by E. H. Schæffle in this issue. Only a small per cent of cane sugar was found in the honey, and yet it is evident that neither the producer nor the dealer meant to defraud.

THE BEE-KEEPERS' UNIONS; A REPLY TO PROF. A. J. COOK.

THE following is just received from General Manager Newman:

Editor of Gleanings:—In your issue of June 15, page 449, Prof. Cook attempts to show that the members of the National Bee-keepers' Union did not understand what they were voting on at the last election. As my name is connected with that statement, allow me a few remarks.

I give the members of the Union credit for more sagacity than that, and I do not think the professor will dare to stand by his published statements.

In the first place, Prof. Cook makes this statement: "Mr Newman says the old Union can not attack any evil but such as it has combated in the past." I beg to say that I never made any such statement, either to Prof. Cook or any one else, and I demand the proof, or the withdrawal of that assertion. Let me state a few facts which none can dispute:

Thirteen years ago the National Bee-keepers' Union was formed in order to defend bee-keepers in their rights as citizens of this republic. This it has done to the satisfaction of all. The Advisory Board has been consulted in every important case, and the General Manager has always been in perfect accord with the Board, there never having been a single disagreement. Indeed, there has been such unanimity up to this time that there has never been a dissenting voice relative to the course to be pursued. The instructions given by the Board in the past have been by me carried out to the letter; and what the Board decides to do in the future will be done; but I can assure Prof. Cook and every other member that neither the decision of the Board nor the vote of the members will be *disregarded*, as he advises in the third paragraph of the article in question. Such a thought is unworthy of a loyal member of any organization.

Last fall the Board gave every instruction necessary to the voting, how the ballots were to be disposed of, who were to count them, etc. For extra caution, as I imagined there might be a question, I directed that they be counted in the presence of a public official, and they were so counted and certified to by the County Clerk, and the correctness of the count was attested by him under the seal of the Superior Court.

At Lincoln, Neb., last fall, a new "Union" was formed for doing the particular work of prosecuting the adulterators of honey. Its originators offered to amalgamate with the National Bee-keepers' Union, and that amalgamation was submitted to vote—the result being for amalgamation, 51; against it, 106—more than two-thirds vote against it, when it would have needed two-thirds for it to have carried. This was an overwhelming defeat.

As Prof. Cook says he voted against amalgamation, he voted with the great majority to continue the two organizations as they were before, even though he now says it was "senseless" to do so. He now intimates that the line of defense which has occupied the Union for the past 13 years is "no longer important." The many bee-keepers who are being legislated against all over the country, and are in danger of being fined or sent to prison, will certainly demonstrate that the defense of the pursuit is yet quite "important."

Again, the Professor says, "The old Union has got to fight living issues or die." Why, my dear sir, that is just what it has been doing all the while—living issues—yes, and for the pursuit, the very *right to live*—its very existence. It will still be "fighting living issues" when its enemies are no longer able to "kick."

The editor is right in saying that there is now as much room for the two organizations as formerly—for the old North American Bee-keepers' Association simply changed its name to be able to prosecute adulterators. The two lines of work are distinct—one to *prosecute* adulterators, and the other to "*defend*" bee-keepers; and, if the members so decide, there is no reason in the world why they should not remain separate organizations and each do its work, and prosper.

If the next meeting of the North American Bee-keepers' Association at Buffalo shall amend the rejected constitution so as to be consistent and effective (as indicated in my criticisms of that document), and it is desired by the Advisory Board of the National Bee-keepers' Union to resubmit it to the members, I shall be pleased to have it done at the next election. If not, then the two organizations should act in harmony, and let the matter of amalgamation drop.

If I am standing in the way, as Editor Root intimates on page 450, let the members of the Union elect Manager Secor, or some one else, and I shall gladly welcome my successor, as I have often plainly stated before. Until then, let us have peace.

THOMAS G. NEWMAN.
San Francisco, Cal., June 22.

If Mr. Newman did not utter the sentiment attributed to him by Prof. Cook, he has said something very much like it. I have not the time to go back over his official utterances, but I do find in the last report he says: "The National Bee-keepers' Union was brought into being for a special purpose—that of defending bee-keepers in their rights as apiarists." And again: "If the Union is to be reorganized to do this work, it will subvert its original purpose and mainly change its character." And again: "The funds in the treasury were accumulated as a defense fund, and should not be appropriated to other uses, without a full and well-understood vote." After this vote was taken, in an article in the *American Bee Journal*, page 291, Mr. Newman again says, with an air of triumph: "The National Bee-keepers' Union decided by an overwhelming vote that it would not consent to amalgamation nor to the use of

its funds for a purpose for which they were not created." It will be seen from the quotations above that Mr. Newman practically recommended that the Union continue in its old line of work, and the voters simply followed his recommendation; that, while the thought set forth in the quotations may not be precisely the same as that attributed by Prof. Cook to Mr. Newman, it is so much like it that, to argue the point, would be splitting hairs.

I am with Mr. Newman and Prof. Cook both in wishing for peace; I am also glad to note that Mr. Newman will be willing to submit the question of amalgamation, providing a union of the two organizations is still sought by both. —ED.

A VISIT TO VERNON BURT'S APIARY: HANDLING SWARMS AT AN OUT-APIARY RUN FOR COMB HONEY.

On Thursday, June 24, I called upon our old friend Vernon Burt (about three miles out), who has the reputation of securing a crop of honey every season, good, bad, and indifferent. I had not seen Mr. Burt this season; and as clover was unusually abundant, I had a curiosity to know how he was coming on. I strapped the Kodak on my back, mounted the wheel, and in a short time I was at his home yard. He had just returned from his out-apiary, that he is running for comb honey without an attendant, and I had caught him nicely at home. The bees were roaring and pouring in at the entrances, not in the pell-mell style as they do on basswoods, but in that quiet way they do during clover bloom. Said I:

"They tell me you have just returned from the out-yard. How do you manage about swarms during your absence without an attendant?"

"All my queens are clipped, and I make sure to see that they have plenty of room."

"Well, what do you do when swarms come out when you are away?"

"I let them come out and go back again. I visit the apiary about every day, and if they come out while I am away, they will also be likely to come out again when I am there, and it is then that I live them."

"How do you live them?"

"I move the parent hive to one side, put a hive of empty combs in its place, and on this I put the super that was on the old stand with its sections completed and partly completed. All the flying bees will, of course, go back to the old location."

"What do you do with the cells in the parent hive?"

"Let them alone. The colony will be so depleted that there will be no after-swarms; and the first swarm itself will not swarm again, but go right on storing in the supers."

"But don't you lose any swarms in that way?"

"Not that I know of," said he.

"How do you manage with swarms at home?"

"In the same way."

"Who looks after your bees here?"

"Mother. She lays a stick on top of the hive from which the bees came out, and lets them fly around till they get ready to go back. When I see a stick on the hive, or some unusual marking, on my return, I know what it means, and treat them accordingly."

"Have you come to any conclusion as to what size of hive for general purposes you prefer?"

"I did think at one time," said he, "that I preferred the ten-frame. I can get the bees in shape easier in the spring in that size than in the eight; but lately I have found that I can increase the bees up to the proper strength in the small hives, and they are more easily handled."

"Which hive do you use at your out-apiaries?"

"The new dovetailed eight-frame. I leave all double-walled and ten-frame hives in this yard."

"I notice your bees appear to be quite busy. You will probably secure 50 lbs. per colony."

"Oh, yes! I shall do as well as that, any way."

Then he opened several hives and showed me how his bees were working in supers. I noticed particularly that the bees were doing just as well on the outside rows of sections as on those in the center; and the sections in all parts of the super seemed to be keeping pace with each other. He went over his hives at random, and every one of the supers seemed to show this even building of the combs.

"How do you account for this?" said I.

"By the slow even flow from clover and plenty of bees."

I then took several snap shots with a No. 5 Kodak, and if all goes well I will show you how nicely Mr. Burt keeps things in and about his apiary. He seems to take things pretty easy, notwithstanding he has 125 rousing colonies at his home yard, and 100 at the out-yard.

"You do not seem to be in a great hurry or excitement," I said.

"No," he replied; "my queens' wings are all clipped; and before the honey-flow sets in I have every thing all in readiness—supers, sections, etc., so that, during the harvest, I do not have to be bothered with starting sections or any thing of the sort. I simply pile on supers, and watch the bees pile in honey; and the swarms, when they come out, well—I take care of them when I get ready."

"Do you use bee-escapes?"

"Yes, sir. I hardly know how I could get along without them."



And a man's foes shall be they of his own household.—MATT. 10:36.

□ In my last I told you that in my trip from Bannock to Barnesville I met with about the usual number of adventures, and I want to tell you something more about it. When I got off at Bannock Station I found the pike without any trouble, and started off in a southerly direction. It was sprinkling just a little at the time; but I always enjoy a sprinkle that will lay the dust; and when I am on a stone or graveled pike, so far as I am concerned I do not mind quite a little shower. Mrs. Root does, however, and she always objects to my riding in the rain unless I have on some old clothing that is of no account; but with this old clothing I am not presentable before strangers. Well, the gentle sprinkle changed to a pretty smart rain after I had gone a mile or two; and in looking about for shelter I discovered a large wide-open gate with a graveled drive that led up among beautiful flowers and shrubbery; yes, and in the midst of the shrubbery was a fountain playing. Of course, the summer shower made every thing look still more lovely; and the beautiful lawns spreading out on either side made me wonder for a time if I had not alighted upon enchanted ground. Come to think of it, I think there *was* some enchantment about the place. Now, do not look disgusted when I tell you that I soon discovered I had wheeled into the open gates of the Belmont Co. infirmary. It is a beautiful place, any way, and does credit to the people of that county. After I had had a pleasant chat with the gentlemanly superintendent the shower abated, and I took another graveled driveway out to the main road again. When I came *into* the grounds I was well satisfied that the main road or pike ran south or pretty nearly so. It might have been somewhat southwest. When I got on to the same road again (out of the "enchanted" ground) it seemed to be going westward; and by the time I had got to the bottom of the long hill, I was going just about north, as it seemed to me; and here the pike from Bannock struck the national pike just as I had been led to think it would; but it did not occur to me at the time that it was a little *strange* that I should come into the national pike from the *south* side instead of the north. Never mind; here was the pike, sure enough, and, no matter how I got there, the thing to do was to turn westward to Barnesville, and this I proceeded to do, feeling as happy as a schoolboy because I was away from business, and out on a vacation, with nothing to do but to have a good time.

Well, I admired the pike, people, and the scenery, even if it did rain. Finally, in order to be a little sociable with my fellow-men, more than because I had any doubt about the proper course I should take, I asked about how far it was to the Barnesville pike.

"Barnesville pike! Why, my good friend, you are going *away* from the Barnesville pike, and at a pretty good pace too. If you want to go to Barnesville you want to turn around and go the other way."

Now, I was as much astonished at this piece of information as if I had seen the sun setting in the east. (By the way, I have several times, in traveling, been greatly astonished to see the sun doing this very thing.) I reflected a little,

and finally, in a sadder and wiser frame of mind, I turned around and climbed the great long hill that I had just ridden down. The hill was wet and slippery, and I was having quite enough exercise without running down hills and then turning around and climbing them again just for the fun of it. I tried in vain to convince myself that west was in the direction the man said it was; but that stubborn part of a person when he is turned around would not be convinced. It made me think of the old adage, "A woman convinced against her will is of the same opinion still," and I mentally decided that, if any *woman* was as contrary as this other part of myself, she must be pretty bad indeed.

Permit me to digress just a little right here. I have before alluded to the fact that there seems to be in every one of us another person—a somebody who seems to be *involuntarily* managing for us. If we fall into the water this other self draws in a great big breath or a sort of gasp. I do not know what he does it for unless he thinks he may get under water and not find plenty of air, so he will lay in a great stock. If somebody goes up behind you noiselessly, this other chap makes a great start. *You* do not do it. In fact, you have nothing to do with it. You could not help yourself, even if you tried to. This queer fellow is right along with you, sleeping and waking. You do not seem to be able to get along without him, and sometimes it is a pretty hard matter to get along *with* him. He and I had quite a tussle about this matter of getting lost. I was vexed because I had lost so much time and strength in going several miles out of my way, through the rain and mud, and I threw the blame all on him. Said I:

"Why, you might have known when you came into the big pike that you were to turn to the *right* to go to Barnesville. What on earth possessed you to turn to the left?"

But this fellow said:

"I think the left is the right way yet. I am sure it is straight west, no matter what the man said. I do not believe he knew."

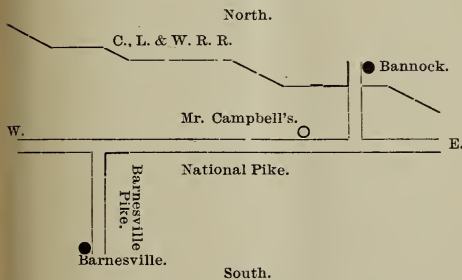
And (would you believe it?) this fellow was so contrary I asked another person. Then said I:

"Why, you stupid idiot, how *could* you get into the national pike on the south without crossing it somewhere, when you started out on the north side?"

At first this other fellow would not say any thing; but when I insisted on some sort of answer, he said he did not know how "we" got there on the south side of the national pike, but we certainly came into it on the south, and he would always stick to it. Did you ever hear of any thing more illogical or provoking? Of course, we two dropped the subject. There did not seem to be any thing else to do under the circumstances; but in spite of every thing I could do he would have it that we were going to Barnesville by traveling *eastward*; so I at last gave up; and when I got mellowed down a little I began to enjoy that beautiful pike. Of course, there were great hills to climb, and it was rainy enough to make the stone roadway a little slippery; but the grand country that showed itself at the top of every piece of rising ground was ample compensation. It seems to me I never saw so much white clover before in all my life as on that trip. I was told there used to be quite a business in keeping bees, but most of them had given it up in consequence of the repeated poor seasons. Just now everybody told me, however, they were having a great flow of white-clover honey.

The rain began to increase again; but I tied up my coat on my handle-bars so it was pretty

safe, and while in my shirtsleeves I greatly enjoyed "letting it rain;" in fact, I was feeling about as happy as I usually get, riding in that summer shower. I began to feel somewhat thirsty; but the great delicious breaths of that damp water-laden air gave me a peculiar enjoyment that I have mentioned once or twice before. If one could get intoxicated on *pure soft water*, I do not know but I should call it a grand kind of intoxication. When I was breathing the heavy spray at Niagara I felt the same exhilaration. I finally came to one exceedingly long hill, still traveling east, as it seemed to me. The rain was increasing to such an extent that I knew I should have to stop at the first convenient dwelling. On top of the hill there was a very pretty little home, on the right hand side, and on the south side of the road—at least this other fellow I have been telling you about insisted it was on the south side, while I was traveling east to get to Barnesville. I have made a little diagram below to show you how I was situated.



You will readily notice the Cleveland, Lorain & Wheeling Railroad where it crosses the pike at Bannock. I have put on the points of the compass so you will have no difficulty in understanding the situation. When I left Bannock I was all square with the world. When I got to the national pike I was turned exactly around. If you take your book and turn it upside down you will see how I was turned around. I was going to Barnesville by traveling from left to right, or at least so it seemed to me in my turned-around condition. I reached the top of the great hill, turned down a little lane, and pushed my wheel into an empty coal-house or shed; but as it continued raining I told the good people who I was, and finally induced the proprietor to take his team and carry me to Barnesville; and the course he took seemed just like going back to Bannock; but yet we found Barnesville all right. Of course, I was turned around all the time I was there; and when I started to go home I left the place exactly as it seemed to me as I left Bannock the day before.

Now, my good friend Campbell, when he carried me with his team the day before, took a common road over the hills; therefore when I took the pike to go home with my wheel it was a road I had never traveled before; but I should get on to familiar ground when I reached Mr. Campbell's, where I had left some of my wet clothing.

Now comes the strange part of my adventure. In running from the Barnesville pike down to the national pike I went through the same kind of experience that I had in leaving Bannock. I started, as it seemed to me, going southward toward the national pike. When I reached it I was turned around again, and came into it from the *south*. Getting turned around twice brought me right.

When I discovered this second change I

thought of the man who was "clothed and in his right mind," and felt happy that I could make the rest of my journey by the points of the compass, and have them seem as they really were; and I began speculating, before I reached Mr. Campbell's, as to what the probable result would be when we came to the house where I had stopped in the rain the day before. In my present "frame of mind" I should find that house on the top of the hill on the opposite side of the road. I could not make it seem possible. Now, let us imagine that there was a discussion between myself and this stubborn, contrary other part of myself. I said:

"Now, look here, old fellow, you were pig-headed yesterday, and got me into a lot of trouble. I tried every way in the world to convince you by solid reason and plain facts that *east* was not *west*, but you would not give up. Now, sir, I have got you in a corner. When you come to Mr. Campbell's, where we stopped yesterday, you are going to find it on the other side of the road. Yesterday you declared he lived on the south side of the road. Now, when you find his house, barn, and coal-shed all moved over on the north side, what are you going to do? My good sir, how will you explain your inconsistency and foolhardy course?"

Would you believe it? The fellow would not say any thing, except that I would find the house on the south side of the road, just as it was the day before. In fact, it seemed to me I was traveling the same road I traveled the day before, or at least in the same direction, but the scenery was different.

Just before reaching Mr. Campbell's from the west I passed through one of the most beautiful valleys I have ever seen—in California, Arizona, Florida, or anywhere else. I do not know of a more beautiful spot on the face of the earth. I got off from my wheel and gazed my fill again and again; and then I drew in long breaths of life-giving air, and rejoiced that God had given me a human life to live. Yes, I rejoiced in the thought, even though God *had* seen fit to send this other fellow I have been telling you about along with me to trouble and perplex me, perhaps until the last day of my life.

I was nearing Mr. Campbell's home, and so I got off from the wheel and walked. If the whole face of creation was going to swing half way round all of a sudden, as they swing a locomotive on a turntable, I wanted to *see* the thing done; and so I kept saying to this other fellow, "Now, then, old chap, which way are you going to have it? Are you going to stick where you are now, or are you going to whop over when you see the old familiar landmarks of yesterday?"

I waited in breathless silence. I looked before me over the hill toward the place where the sun rises, and barely caught a glimpse of Bro. Campbell's house, and, as sure as you live, *his whole farm and surroundings* had been moved during the night to the opposite side of the road. This illusion was only momentary, however; for, just as I was going to crow over this other fellow, quicker than the wind I *myself* was swung around to the east, where I had been looking, and approached my friend's home in the very direction I went from it the day before. My right position of the compass was only short-lived. This other fellow triumphed, and I went all the way back to Bannock turned squarely around; but I inquired my way, so that I did not get into any more mishaps.

I have told this little story, dear friends, simply to illustrate to you the fact that there is a part of myself—yes, a part of your old friend

A. I. Root—that will not listen to reason or common sense. He is a dangerous adviser and an unsafe counselor; but yet I can not get rid of him. He has been with me as long as I can remember—at least I can remember of being bothered by getting turned around in certain localities, even as far back as when I was four years old; and that very spot where I was turned around at that time bothers me to this day. The sun does not come up in the right place, neither does it set where it does here in Medina, and I have to be constantly figuring and planning when I am in that locality unless somebody is with me to keep me straight.

I shall have to explain to the friends in Belmont Co. that I started on my trip with such a sudden rush that I actually forgot to look up our list of subscribers in that locality. And another thing, work was so much crowding here at home that I had absolutely no time for more than a flying trip. I was so much pleased, however, with the beautiful country, nice farms, and farmers' homes, that I contemplate another visit after we are through with our present rush. So don't think your old friend purposely passed by you.

GUIDE-POSTS.

My story in the present issue, about getting turned around, missing trains I expected to meet, etc., illustrates the great need of legible guide-posts throughout our land. Since the wheelmen have agitated the matter, however, we have a good law in this State, a copy of which is as follows:

SECTION 4734. The township trustees shall cause to be erected and kept in repair, at the expense of the township, at all intersections of the public ways of the township which lead to any city, town, or village, depot, or other important place or road, post and guide boards, displaying, in legible letters, the name, and indicating the direction and distance to all such places to which each of said roads leads.

Upon presentation to one of the trustees of a petition signed by ten free-holders, electors of the township, asking for the erection of a post and guide board at any designated intersection of the public highways of such township, and naming the inscription desired thereon, the trustees shall forthwith cause the same to be erected; and, failing or neglecting to do so for the period of sixty days, the petitioner may cause the same to be erected, and collect the cost thereof, not exceeding five dollars for each post so erected, from the township trustees.

SECTION 2. This act shall take effect and be in force from and after its passage.

In spite of this, however, I did not see a single guide-post on my route, although I looked carefully and anxiously for them.

OUR HOMES.

And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.—GEN. 2: 7.

Dear friends, it may not be true that this perverse part of us that will not acknowledge the truth when it is presented to us (when we are "turned around") is the *evil* part of humanity, but it is certainly a stubborn and perverse spirit that exists in us all, or at least nearly all. When I can plainly see the sun rise and set, then this stubborn, unyielding spirit *usually* gives up, but not always, even then. Instead of confessing that he is wrong, he sometimes insists that all creation, including the sun itself, is out of joint rather than acknowledge his own blundering. As I am saying, it may

not be true that this unreasoning spirit is the spirit of evil that is within us all, yet in some respects it is much like it. A good Christian mother was reasoning with a little boy: She said:

"Sammy, aren't you sorry you were so naughty?"

But he shook his head. She repeated the question, and insisted on his answering. But he only replied that he was not sorry. Poor Sammy! He was perhaps depraved and wicked, but he was truthful; and even since I have got to be 57 years old I have had some experiences like Sammy's.

One day when I was tired out in both mind and body, and thirsty besides, and suffering also for my morning nap, I came into the house for my daily drink of hot water. I felt so tired and worried I would have gladly kept out of sight of anybody until I could reach my desired resting-place. But it did not seem possible unless I went without the cup of hot water I longed for. In securing it, something vexed me and I uttered some impatient words. Then came a conflict that lasted not only several hours, but I felt some of the effects of it for several days. The bad spirit said, "It surely is your privilege to have rest and a drink of water if you ask for nothing more, even if you do make somebody else a little trouble in getting it."

But another spirit (and I trust it was the ruling one) kept remonstrating by saying:

"Are you living for self or for the good of others? Are *you* going to take care of yourself through life? and when you come to die are you alone equal to the task of closing your dying eyes, or do you expect others to care for you when you can not not care for yourself? Is your life in this world 'to be ministered unto or to minister' to others?"

And then comes the thought of my favorite text, about bearing not only our own burdens but those of other people, for Christ's sake. Christianity opposes point blank the idea of self and selfishness. At such times this other spirit, or "other fellow," will say:

"Oh! these nice texts are all very pretty to talk about in prayer-meeting. The idea of self-sacrifice is very well to sing about in hymns; but when it comes right down to living it out in every-day life, it is a good deal humbug and folly."

Yes, dear reader, it is true that I, who have been a Christian, or at least have called myself one, for 25 years or more, have something within me that suggests thoughts like the above. There is the selfish, unreasoning brute nature remaining still. Somebody has suggested that we were created brutes or savages, and would have remained so had not God himself breathed his spirit into us; and, in the language of our text, from that time forward "man became a living soul." That word "living," I think, should be taken in the sense that our Savior uses it in speaking of life—John 10:10: "I am come that they might have life, and that they might have it more abundantly." We do not understand by this simply animal life, but spiritual life born of God. The Bible enjoins us on nearly every page to beware of this selfish animal nature. In some places it is spoken of as the old Adam. In one text it says, "He that ruleth his own spirit is greater than he that taketh a city."

There is a suggestion that the God part within us should hold in check this unreasoning animal nature. This "other fellow" that I have spoken of in my travels in this issue would urge to strike back when we are injured. The God part says, however, "Love ye your enemies;

do good to those that hate you." In one of the recent prizefights it is reported that the crowd cheered on one of the parties, urging him to *kill* his opponent. In the last fight of all, it is said that even a *woman* used such an expression. Now, there is not only no Christianity in such an attitude of the human heart, but there is no sense or reason, and Christianity should be reasonable above all other things. A small boy pushed a larger one off from the walk into the mud, and soiled his clothing badly. The larger boy got up, but did not do any thing by way of retaliation. Somebody asked him why he did not give that boy as good as he got. He replied good-naturedly, "Then there would have been two suits of clothes to be cleaned instead of one."

The boy might have added that two tired mothers would have been obliged to clean up two suits of muddy clothing instead of one. This boy was not only a Christian but a philosopher. He let sense and reason guide him instead of the low passion of revenge.

A few days ago one of our boys came to me saying a man who works near him had struck him several blows. The man admitted he did, but said the boy called him a bad name, and for a time he insisted that it was the right and proper thing to do—that a man is justified in striking a boy just because the boy "sasses" him. How sad it is that so many people will still hold fast to this old-fashioned silly idea, that, to make things right, one man must strike another, or strike a boy, if he chooses, simply because of something he says! This "other fellow," of whom I have been talking, says, "Knock a man down when he abuses you." Sense and Christianity say, "Not so;" and *Jesus* tells us to turn the other cheek also when we have received a blow. After I had talked a while with these two friends of mine (the man and boy) the older one got the upper hand of the brute spirit within him so far as to tell me he was sorry that he let his temper get the better of him, and finally he told "*Johnny*" he was sorry, and asked his forgiveness. When he had got thus far, *Johnny*, not to be outdone—for a good spirit is catching as well as an evil one—said, "All right, I am willing to let it go, and I will ask him to forgive me for my foolish talk, which would not have happened if I had been attending to my work."

Many great and good men would have been almost perfect in their characters had it not been for their tempers. Our lamented friend and teacher, Drummond, in his little book, "The Best Thing in the World," says a bad temper is "the vice of the virtuous." I suppose he means by this that people who are so intelligent and well bred that they would be above any other sinful habit are sometimes guilty in just this one respect. I told you that this "other fellow," who *always* goes with me, had tormented and vexed me since I was four years old. Well, I can remember that this same "other fellow," or one of his relations, used to torment and vex me when I was scarcely more than three years old. We lived then in a log house with only one *other* apartment, and that was the woodshed. Sometimes when mother's boy was persistently bad she would say to me, "Amos, I think you will have to go out into the woodshed and stay there till you can get rid of the bad boy." Well can I remember of going out there and sitting down and endeavoring to quell the tumult in my childish heart. Sometimes mother would call to me, "Have you got rid of the bad boy yet?" But I think I was like Sammy. I could tell the *truth*, even if I could not drive out the evil spirit. So I replied, "Not yet, mother." In due time, however, I would come in smiling;

and in answer to her inquiry, "Are you sure the bad boy is all gone?" I could look up frankly and smilingly into her face and say, "All gone, mamma," and then I was happy, and *she* was happy too. I presume that old mother will read these very words, and remember the incident as vividly as I do now.

Our older readers will remember of a minister who was a bee-keeper who used to write for these pages some years ago. Although he was a minister of the gospel, and a good one too, he was all his life tormented by a disposition such as I have described. It even followed him at times into the pulpit, and again and again the evil one was driven away only by earnest prayer to the Savior and Redeemer of mankind. On his deathbed he said to his wife and children something like this:

"Dear friends, I feel and see that the evil one has finally lost his power and hold on me for ever and ever. Nevertheless, through all eternity, shall I feel his touch and abiding presence again; and I glory in the thought of being with *Jesus*, where sin and temptation and remorse shall never reach me again."

Now, then, friends, the question comes home to you and to me, "Who is going to rule and guide—the 'other fellow,' who would lead us into trouble and snares, or shall sense and reason, and the influences of the Holy Spirit, lead your life and mine through the remainder of the years we have to live?"

Return, O Holy Dove! return,

Sweet messenger of rest;

I hate the sins that made thee mourn

And drove thee from my breast.



REPORT ON THE NEW VARIETIES OF STRAWBERRIES IN THE MIDDLE OF JUNE.

The Marshall has done grandly, both under glass and in the open air. Brandywine is just beginning to ripen, and grow berries that can hang on the vines for two or three days, and still be so firm and solid that they may be tumbled about like potatoes. The Wm. Belt is well loaded with fruit, but only just beginning to ripen. Margaret has given us some of the largest and finest berries I ever saw; but the Nick Ohmer caps them all, not only in great size, but in producing berries as round and symmetrical as a peach, and pretty nearly the size. I kept one on the vines for three days to show to visitors, and it was very solid and firm when picked. It weighed almost an ounce and a half. This was from a plant set late last fall. The runners were not picked off, and it was allowed to mature a full crop of fruit. Carrie, a seedling of the Haverland, is a much larger berry than "her mother," and considerably firmer, and I hope as prolific, although I am not certain, for I had only half a dozen fall-set plants. The shape of the berry and the appearance of the variety are almost exactly like the Haverland. Clyde started out to give a great lot of berries on spring-set plants. One of the plants set so full, in fact, that, when it got its great cluster of berries almost ripe, it—up and died! I suppose it was the hot weather that did it while the plant stood by itself unprotected. It seemed almost like "cruelty to animals" to let it undertake to ripen such a big lot of berries. Now, when you are testing new plants take a warning from the above.

WHO WOULDN'T BE A GARDENER?

Sometimes I think it strange that there is anybody in this world who does not have a garden; and then at other times, when prices are low and we can not get the cost of our stuff, and every thing seems to go wrong, I do not wonder that so many people say they would rather buy their stuff, what they want, than to be bothered with any sort of garden. Well, yesterday and to-day have been bright days for the gardening business. After a severe drouth we had a succession of refreshing showers. Our beds were so full of plants that I began to fear we should never have customers for all of them; but after the shower the people came in crowds for plants. I stationed myself near the garden, and called in help for the boys, and it kept me as busy as I could be in answering questions and giving directions.

In putting up vegetable plants quite an amount of time may be saved by a little preparation beforehand, and the exercise of some study and brainwork. Unless I am around to take charge of things, our boys will go with the customer and let him select the plants he wants. Then they will take them up and carry them to a stand or table, and sometimes right into the store, and they used to tie them with wrapping-paper and string. But I have shown them a much better and cheaper way. Get some stout paper bags, such as hardware dealers use to wrap up nails, etc., with. Have three or four sizes of these bags at different points, and especially near the beds where the plants are growing. When a customer calls for plants, and tells how many he wants, select a paper bag of the proper size, put your hand in it and straighten it out so the top will stay open; then take up your plants and lay them in a heap, shaking off most of the dirt as fast as they are taken from the soil. When you get the right number, take both hands and press the roots up into a small compass, letting the tops come up between the wrists. Now, if your paper bag was opened properly, and is of the proper size, you can put the ball of roots right down to the bottom. The paper bag protects them from the air, keeps the dirt from rattling off, gives the tops just enough ventilation, and not too much to have them keep without wilting. If you do up your plants first, and handle them twice, you rattle the dirt off a good deal more, and expose the roots to the drying effects of the air. I suppose, of course, no plant-grower would undertake to remove plants without first thoroughly soaking the bed with water. Even after we have had a long rain we think it best to soak the ground, either with the hose or watering-pot; then with a good stout trowel push clear under the plant, and loosen it up so all the small fibrous roots will come out along with it. A smart boy who is trained to the business, and carries his paper bags along with him whenever he goes for plants, will wait on a dozen customers, and have things in better shape, in less time than some people would take to wait on a single customer.

While the "boom was on" for plants people began to go for the strawberries lively. They had just got down to 8 and 9 cents, and somebody in the store was complaining that there was not a quart of strawberries to be had, and customers waiting. But there were some big rows of Bubachs, Marshalls, and Brandywines waiting to be picked; and in a twinkling we had a lively time around the *strawberry*-beds. We might have put up a notice, "Beautiful strawberries picked while you wait." In fact, that is what we did do. With myself on hand to show off the plants, and give the names of the different varieties, it was not at all surprising

that customers would say, "Well, I think I will have a quart;" or, "Why, I will take two quarts of those great big ones, if you give heaping measure like that," etc.; and just when I began to fear there were more strawberries than we could easily get rid of, they were all cleaned up—in fact, so much so that the boys, in their efforts to get a few more quarts for a customer, picked some that were rather green. Oh how the new varieties have brightened up and enlarged since the rain!

This year we are testing our new varieties, as I have explained, by putting them in our plant-beds 18 inches apart. This is just about right; and if you do not step on the beds at all it gives plenty of room for putting down runners. It is wonderfully interesting to me to note the peculiarities and desirable traits in the different candidates for public favor. For instance, Clyde, that has been considerably talked about, is really bearing a wonderful crop—wonderful considering that the plants were put out only this spring. The Ideal, planted at the same time, is giving the handsome berries in shape and color, almost, that one ever saw. The berry called "Pet" (I do not know where it came from) is the sweetest berry I ever tasted. It really brings forth an exclamation of surprise when one puts it into his mouth. I do not know how good a berry it will be, for all I have mentioned above were put out last spring. Brandywine and Wm. Belt are both doing wonders. These were planted out late only last fall, and yet an acre of such berries as they are bearing would be a pretty nice thing to have, I assure you. Great big berries, with the boxes heaped up, bring just about double the price of ordinary varieties, such as Warfield and Haverland.

Some years ago Peter Henderson recommended a plan for market-gardeners, for growing strawberries. It was, to put out potted plants in the fall (of course the earlier the better), on rich ground where some crop had been removed. All the runners were to be kept off, the plants stimulated to their utmost, and then, after they have borne just one crop, eight or ten months after planting, plow them all under and do it over again. On account of the difficulty of working up the ground thoroughly while it is occupied by a crop of berries, and also the tremendous expense of weeding out a weedy strawberry-bed, I often think I should like Henderson's plan pretty well. Work your ground up deeply and thoroughly, after any spring crop comes off, then plant your strawberries, get one crop, and then do it over again.

At present writing, June 22, all of our strawberries may be said to be in their prime; and I tell you we have got some wonderfully nice berries among the new ones that are now before the strawberry-loving public. There are so many splendid berries I really feel troubled in deciding in regard to them. The Marshall has done grandly. The berries are large, there are lots of them, and they are quite early. The color is beautiful, the shape is almost faultless, and the flavor delicious. Our bed where we grew them under glass is even now putting out blossoms for a moderate crop to ripen along in July, just as we had them last year. But, why is not the Marshall good enough? Well, the Nick Ohmer and the Margaret are considerably larger than the Marshall. On my small experimental bed, however, they are not bearing as many berries as the Marshall; but it should be remembered that they were planted late only last fall. The Brandywine comes in just after the Marshall, and the berries are immense; but it does not furnish the quantity that the Wm.

Belt does coming a little later. The plants were, however, put out late last fall, and may not be up to their best; but the Wm. Belt was also planted late last fall. This spring they did not seem to have withstood the winter nearly as well as the Brandywine; in fact, I was somewhat disappointed in regard to its hardiness. But they began to grow, and, almost before I knew it, had put out great fruit stems, and now it is ripening the largest berries I ever saw in my life; and in *quantity* they are piled up almost like the Haverlands.

As Matthew Crawford says, the first berries to ripen are a good deal cockscombed; but after that you get berries as nice in shape as the Marshall or Nick Ohmer. Just a word about these first cockscombed berries. We had one that seemed to be great flat berries united. There were four lobes to it, in fact, and it was a good deal the shape of a cube. Its weight was $2\frac{1}{4}$ ounces—I think the heaviest berry I ever grew. If you take a peach or an apple weighing $2\frac{1}{4}$ ounces, you will get some idea of its size. The cube was $2\frac{1}{2}$ inches on each side. Of course, the berry had to be eaten as you would an apple, and it took several bites to eat the whole of it. At present writing there are lots of these berries that are simply great chunks of fruit. It is almost as sweet as the old Sharpless, and they are good eating without any sugar at all. When one is tired and thirsty, say along between ten and eleven o'clock, three or four of these large berries make quite a nice little lunch. In Mr. Crawford's spring catalog he answers the question, "Which is the best strawberry?" as follows:

I will say that the Wm. Belt is the best berry that I have ever grown here.

I do not know but I pretty nearly agree with him. He adds further:

For vigorous growth, great productiveness, large size, and good quality combined, I never saw its equal. Under high culture, the first berry on the fruit-stalk is apt to be cockscombed; but who will object to having a few of their berries flat and three inches in diameter? I am not sure that I ever saw two misshapen berries on one fruit-stalk. All but the first one are uniformly of good shape. The color can not be improved. It is neither crimson nor scarlet, but bright, glossy red.

Now, mind you, from my standpoint this 22d day of June I feel like placing the Wm. Belt equal to any thing I have ever come across in the way of a desirable berry. Of course, we want some earlier berries, before the Wm. Belt begins to ripen, and we are just now making our last picking on Michel's Early.

Our friend Dan White, of New London, O., was here a few days ago, and he tells me he is putting out an acre and a half this year on the plan I gave on page 782, Oct. 15, 1895. He says there is not a ripe berry to be found among his Gandys as yet, and he places the Gandy as the latest berry to ripen he has ever found.

By the way, the berry that I was so well pleased with last year, and that came as the Great American (see p. 508, issue of July 1st, last year), I am obliged to think is only our old friend Sharpless under another name. The berries are now in their prime; and the reason they were so much later than every thing else last year was on account of their being grown in such a thick solid bed. The rank foliage and the close planting kept the sun out so as to make the berries late. Well, even if it is the Sharpless the incident has opened to me a new possibility in strawberry culture. Make your ground exceedingly rich (it had better be heavy clay soil underdrained), then let the plants grow all over. Let them stand just as thick as they have a mind to. Perhaps some currant

bushes or something of the sort to help shade the ground will assist in making them backward. Now, notwithstanding its cramped circumstances, the Sharpless, after all other berries are gone, will produce great monstrous fruit. Of course, the berries will not be colored up very much, or at least not to amount to much; but the Sharpless is very nice to eat when it is partly ripe. But you will find a purchaser at good prices while other berries are too small to bother with. Besides, such a plantation would be little or no trouble. When once started it would choke out every weed that attempts to grow. I have now in bearing some of the *genuine* Great American which I received from the originator a year ago. It is a very nice large berry, much like the Marshall, but later; but the plants which were set out last fall do not bear as many berries as the Wm. Belt put out under similar circumstances.

SUB-IRRIGATION FOR STRAWBERRIES.

At this date, June 26, right here, we are having a pretty severe drouth, and it comes almost right in the midst of our strawberry crop. It affects us worse because the ground was packed down so hard by our excessive rainfalls that it cracks open and does much damage except where the surface has been fined up by cultivation. Our choice strawberries that were planted out late last fall, and which are in narrow rows, we have cultivated and fined up the space between the rows, so as to obviate the drying and cracking, at least as much as we could without interfering with the mulch. The mulch of straw and potato-tops is not sufficient to prevent damage entirely. Our berries are drying up, the greater part of them, and look as if they had been cooked. Had the soil been worked up down deep after the heavy packing rains, the damage would be but slight. In fact, corn and potatoes planted in well-pulverized ground after the rains are not suffering perceptibly. We have just had an opportunity of testing the benefit of water in one of our sub-irrigating beds. It is planted to strawberries, but no water was turned on during the spring. I purposely left the bed until the berries began to be small and dried up somewhat. Then we turned on water until it came up from below, so as to dampen perceptibly the surface.

In 48 hours the whole aspect of the bed was changed. Every green berry began to fill up and expand wonderfully. Those that had begun to shrivel, plumped out, looked very glossy and juicy, and they were juicy too. I tell you.

There has been considerable said about selling strawberries at the low price of 4 and 5 cts. a quart. Well, that is pretty low; but if we had our beds so arranged that we could water them from below, letting the water gradually rise up until it comes just near enough the surface, I do not know but we could do a pretty good thing by selling water at 4 or 5 cents a quart. Choice varieties like the Brandywine, Wm. Belt, Marshall, and others, bring 6 and 7 cents a quart—sometimes 8.

By the way, the latest berry to ripen on our ground this season is the Champion of England. I think the location of the bed, however, helped to make it late. It was on the north side of a grapevine-trellis, and protected from the sun pretty well all through the day; then it was mulched with potato vines last fall, so that the plants had to creep up through the vines to get out into the open air. This helped to make them late. This morning we made our first picking. A good many of the finest berries were scattered through the potato-vine mulching. The drouth had hurt them but very little, and the great clean luscious berries hidden

away in the dried-up potato-vines were in beautiful shape. To get berries extra early they should be in thin rows, or, better still, in hills, and we should work the ground without any mulching until just before the fruit ripens; but for a very late berry, heavy mulching is needed all through the spring to keep them back, and then the shade of a grapevine or of trees will also help. This, with heavy matted rows, will enable us to have fine large berries after the others are gone; and my impression is, that sub-irrigation, with the water let on at just the right time, will also help to prolong the crop.

WINTER OATS—ONE OF MY FAILURES.

Perhaps I have been telling about some of my successes a little too much, while I have said little or nothing about recent failures. A year ago I reported that our Rural New-Yorker winter oats came through all right, or with but little injury. We sowed the seed and put in between two and three acres last fall. They came up promptly and showed a good stand all winter, although I remember of several times thinking they looked a little queer for oats. They wintered perfectly, and this spring we had a magnificent stand. In some places they were a little scattering; but they stood out so they just kept down the weeds and every thing else. When they began to head out, my teamster suggested that the cold winter had turned the oats into chess. I told him what the experiment stations and agricultural papers say about it; but he said he knew all about that; but when I saw a whole field of grain turn into chess he thought I probably might have my faith shaken a little, or something to that effect.

My oats kept growing, and they kept looking more peculiar. There was some real old-fashioned chess among the oats, and I sent a man over to the field to cut it out. Another friend suggested there were two kinds of chess, and that my winter oats looked very much like one of the kinds.

About a week ago, when the oats came into bloom and there were going to be three or four grains where there should be one of oats, I was obliged to give up that something was the matter. I sent samples to our experiment station and to the Rural New-Yorker folks. I also sent a sample of the oats I sowed, and told them something like this:

"We sowed oats such as we send you by this mail, and we have a beautiful crop of green stuff such as I also send you by this mail. We sowed oats, and shall we reap chess? If not, 'what shall the harvest be?'"

After my two samples and missives had gone I began to feel still more uneasy. I went down to the seed-room and asked for a sample of our winter oats. I showed them to the teamster, to let him see that they *were* oats and nothing else; but while we were looking them over he said, "Why, there is *some* chess in this oats, as sure as you live." Then I looked over the handful, and, to my astonishment and dismay, I found perhaps one grain in five or ten that was a large kind of chess. We could easily sort out the chess from the oats; and my present explanation is that the cold winter killed out every grain of oats and left the chess. In fact, when we plowed it under we could not find a single stalk of oats in the whole two or three acres; but there was a nice even stand of chess. It seems to me almost incredible that the few chess grains should have made so perfect a stand; and it seems also exceedingly strange that not one grain of *oats* survived the winter.

As soon as I discovered the chess, of course I

notified both the Rural New-Yorker and the experiment station in regard to the matter. Prof Hickman replied, before he received my second communication, as follows: "□ □

□ Mr. Root:—I am sometimes mistaken, but I think you will have sown oats and reaped chess. I think I am entirely safe in arriving at the conclusion that your experience with the winter oats will be like ours at the station; and that is, that your oats have frozen out, and in their place you have chess. This is not oats turning to chess, but simply history repeating itself. Cut the chess and make hay out of it before it gets too hard, and before the seed ripens or even matures sufficiently to reproduce itself. I thank you for calling our attention to this matter. It is one of interest.

Wooster, O., June 15.

J. FREMONT HICKMAN.

Permit me to add further in conclusion, that no such chess as this has ever been seen before on our premises or in this neighborhood. The stuff was promptly plowed under while in full bloom, June 18, and the ground planted to Thoroughbred and Freeman potatoes.

Special Notices in the Line of Gardening, etc.

By A. I. Root.

NEW AND DESIRABLE VARIETIES OF STRAWBERRIES FOR IMMEDIATE PLANTING.

We have decided to furnish the following kinds by mail postpaid, at prices given, but can not promise to ship promptly, for the demand may be greater than the supply. All we can do is to promise to fill the orders in rotation. If the drought continues that is with us now, the only way we can furnish plants will be to irrigate, and this of course will make them more expensive. The first three mentioned are offered by the originators only, and at from \$2.00 to \$3.00 per dozen. In view of this we think our prices are moderate as follows:

Carrie, Darling, Earliest, and Nick Ohmer, 15 cts. each, or \$1.25 for 10 plants. You may have all of one kind, or a mixed lot, of all these, as you choose.

Margaret will be 10 cts. each, or 75 cts. for 10 plants.

Brandywine, Marshall, Wm. Belt, will be 5 cts. each, or 40 cts. for 10.

We shall not be able to furnish them in larger quantities than the ten lots until later on. We will let you know when we can make better prices. By way of description we will say Carrie is a seedling of the Haverland, but the berries are much larger and firmer, and the plants seem to be stronger growers. The Earliest is away ahead in point of earliness of any thing I ever met before. During the past spring we were obliged to cover the blossoms with glass to prevent them from being killed by frost. For such an early berry it is fairly productive. The Darling is much like the Earliest, but a little later. The berries have a wonderfully enticing rose color when only partly ripe. One of our six original plants bore a very large lot of berries. Nick Ohmer gave us one berry as large as a small lemon, and as faultless in shape as a lemon. As we received the plants only last fall we can not as yet say how productive they will be.

Brandywine, Marshall, and Wm. Belt have been sufficiently described in this and previous issues. We are going to try hard to mail the plants promptly, whether we have dry weather or not; and when you get them we hope you will give them shade and water, so that every plant shall live, whether you have dry weather or not.

A single strawberry-plant put out in July, watered and shaded and cared for, should make at least a dozen before winter comes; and with such plants as the Earliest, Michel's Early, Warfield, and others, that make plants rapidly, I think I could, in our rich plant-beds, increase one plant to 50 or perhaps 100. Of course, this requires much care and pains. During a drouth I would not only use water, but shade the plants with cloth in the middle of the day; so you see that, even though you do pay a pretty good price for these choice new varieties to start with, if they should continue to find favor you